The Dissertation Committee for Jae Kook Lee Certifies that this is the approved version of the following dissertation:

INCIDENTAL EXPOSURE TO NEWS: LIMITING FRAGMENTATION IN THE NEW MEDIA ENVIRONMENT

Committee:

Maxwell E. McCombs, Supervisor

Nick Lasorsa

Renita Coleman

Natalie Jomini Stroud

H. Iris Chyi

INCIDENTAL EXPOSURE TO NEWS: LIMITING FRAGMENTATION IN THE NEW MEDIA ENVIRONMENT

by

Jae Kook Lee, B.S.; M.A.

Dissertation

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Philosophy

The University of Texas at Austin

August, 2009

Dedication

For my family

Acknowledgements

I owe many thanks to many people completing this research. I was lucky enough to have a stellar committee for my dissertation. Since early years in my graduate study, Renita Coleman has tremendously helped me develop academic competences. Her critical comments and warm encouragements have been great motivations for me throughout my graduate study. Natalie (Talia) Jomini Stroud has surprised me in many ways since we first met in 2006. I have always found new, often big, holes in my theoretical and methodological thoughts from Talia's insightful comments. Also serving on my committee, Nick Lasorsa and Iris Chyi significantly extended my intellectual boundaries. Finally, I can never fully express my gratitude and respect for my advisor, Maxwell McCombs. Without his masterful guidance, I could have never reached this point of academic progress, much less the dissertation project. I only hope to emulate his endless, passionate quest for knowledge.

Many other members of the Texas community have contributed to this research. I am grateful to Homero Gil de Zuniga and Center for Journalism and Communication Research for the use of the survey data. I can never forget the painful but fruitful process of survey design at CJCR in the fall of 2008. Though not on the committee, Stephen Reese showed me an example of how scholars should approach research. He also allowed me to access his class to recruit experiment subjects. I also should thank Joseph

Straubhaar for granting his class for the experiment. I would like to thank the Experimental Political Behavior and Communication Laboratory at Department of Government and then-director, Nick Valentino, for allowing the use of the lab resources for my experiment. Fellow graduate students' help was crucial in data collection for this research. Nak-Won Jung and Yonghwan Kim greatly helped me finish tedious works of content analysis of news stories and answers to open-ended questions in the survey.

Finally, I am deeply grateful to my wife and family. They constantly gave me joys and motivations to endure darkest days and to complete this research.

INCIDENTAL EXPOSURE TO NEWS: LIMITING FRAGMENTATION IN THE NEW MEDIA ENVIRONMENT

Publication No._____

Jae Kook Lee, Ph.D.

The University of Texas at Austin, 2009

Supervisor: Maxwell E. McCombs

Recent changes in the media environment have generated serious debates about whether these changes will foster or hamper the proper functioning of democracy. Along this line, the tendency toward audience fragmentation has arisen as one of the main concerns that might undermine a healthy democracy. People are not likely to discuss common social problems and understand each other in fragmented society, much less agree on methods to solve them. This dissertation investigates whether the environmental changes result in the audience fragmentation. This study first clarifies conceptual and operational definition of fragmentation. It is conceptualized as division of the general public into small groups not communicating with each other, and operationalized as existence of a common agenda by means of incidental news exposure facilitated by structural factors of online communication, an exemplar of the new information environment.

Data from several different methods are employed to investigate effects of new media on fragmentation: a content analysis, a survey, and a laboratory experiment. The

results provide evidence supporting that the public still can share experiences by learning a common agenda from the media on the Internet, the medium considered an icon of the new media environment. Findings of the content analysis found significant positive correlations between news agenda of different media outlets, indicating that there is a common agenda in the media. Environmental factors of the media environment rather than individual differences in political predispositions have strong influence on people's incidental news exposure, a key route to acquire a common agenda. A series of analyses based on the survey found that overall frequency of Internet use significantly predicted individuals' reports of incidental news exposure online, whereas there was no significant relationship between political predispositions and incidental exposure. It also appears that certain online activities such as getting entertainment/sports information significantly predicted the incidental news exposure. The incidental news exposure was found to have actual effects on people's learning of a common agenda and recognition/recall of information carried by stimulus messages in the experiment. The implications of the findings are discussed in terms of communication research and media/democracy.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction: Learning about Issues without Intention

The advance of digital technologies has driven significant changes in the media environment, which in turn have generated serious debates about the future of society. At the heart of the discourse is whether these changes will foster or hamper the proper functioning of democracy. Along this line, the tendency toward audience fragmentation has arisen as one of the main concerns that might undermine a healthy democracy. Many have warned that higher selectivity in the new information environment will stimulate fragmentation in the public, leading to the decline of social cohesion. Fragmentation threatens democracy in that it prevents people from sharing public issues and from understanding each other (Sunstein, 2001; Turow, 1997). It is obvious that an extremely segmented public cannot discuss common social problems in a constructive fashion, much less agree on methods to solve them.

Changes in the media environment, exemplified by the prevalence of the Internet, have apparently raised the likelihood of audience fragmentation. People now have unprecedentedly numerous options for consuming their preferred media content and channels. Research has reported that audiences are indeed more likely to turn to media content specific to their interest under media conditions with a broader range of choices (Atre & Katz, 2005; Youn, 1994). Further, it is documented that the changes in audience behavior lead to inequality in political involvement, such as news media use, knowledge, and voter turnout (Prior, 2005, 2007).

Despite these results, debates of fragmentation are far from conclusive. Even though the high selectivity in media use may deepen political inequality, it does not necessarily lead to the loss of common ground that society depends on. To capture the exact meaning of fragmentation as a social problem, its definition should be first

clarified. Following previous research (e.g. Turow, 1997; Sunstein, 2001) warning of fragmentation in the new media environment, this dissertation conceptualizes fragmentation as the formulation of small and exclusive speech communities, where members of different communities fail to communicate across borders and to hold shared experiences.

As Tsfati (2003) articulated, agreement on what are important problems in the community is a basic requirement for any meaningful discussion. Without this consensus, there would be no basis for further discourse on public affairs, and thus no chance to have a sense of community. In the past, a variety of social institutions have provided people with the opportunity for common experiences. In particular, news media have long been identified as playing significant roles in regard to building a community (Bryce, 1888; Lowell, 1914; Tarde, 1898). The press performs this function by presenting important issues of the day to an audience (McCombs, 1997). In this regard, the common agenda presented by news media works as a basic element in connecting individuals and small groups to a larger community. The discussion about fragmentation inevitably involves this role of mass media, because media have contributed to building a consensus at varied levels of community. The mass audience is not likely to fragment, as long as the connection by the common agenda persists. In this light, this dissertation evaluates the advance of fragmentation by investigating whether society will maintain a common agenda for public life or will lose it in the new communication environment.

Whether audience fragmentation occurs hinges on the interaction among factors influencing the diversification process (Neuman, 1991). New technologies have the potential to drive diversification. Another important driving force is education: the diversity of public opinion also grows with an increase in level of education. Economics of the media industry and the psychology of the audience work as countervailing forces

of audience fragmentation. Media corporations intrinsically pursuing economies of scale inevitably curb the diversification of news coverage. Audiences also have restrictive factors in terms of psychology, with limited cognitive capacity and resources such as leisure time to search for information they want. A close look at the results of interaction among the factors will generate more ideas about the question of audience fragmentation.

This dissertation predicts that the public will hold a common agenda in society despite powerful drives of diversifying factors, such as communication technologies and audience selective exposure. The prediction can be tested by looking at assumptions of fragmentation. McCombs (2005) identified assumptions that should be tested before audience fragmentation occurs and thus agendas are extremely individualized. The audience-side assumption is that a good portion of the public has access to the Web and habitually visit diversified Web sites for public affairs information. The media-side assumption is the existence of high heterogeneity in the media agenda across different news outlets. Without meeting these two assumptions, the likelihood of audience fragmentation cannot be high enough to threaten the persistence of the common agenda.

The media-side assumption can be tested by research on the homogeneity of the media agenda. The fragmentation hypothesis rests on the assumption that diversified news media offer a variety of different agendas. The unprecedented increase in media channels has raised a possibility of fragmented media agendas (Shaw & Hamm, 1997; Chaffee & Metzger, 2001). Some findings suggest that online media tend to specialize in certain topics, lending support to effects from fragmentation-driving forces of technologies (Tewksbury, 2005). Further, new media such as political blogs and Web sites of cable TV news (FoxNews.com) were found to show significant partisan filtering in their judgments of newsworthiness, suggesting a possibility of a heterogeneous media agenda (Baum & Groeling, 2008). However, news media also are likely to maximize the

utility of information gathered by news coverage in order to minimize production cost, which constricts diversification of the news agenda. Findings of agenda-setting effects among news media will enhance the probability of agenda homogeneity across media outlets. In this sense, intermedia agenda-setting studies have demonstrated evidence supporting a homogeneous media agenda in the new media environment (Lee, 2007; Lim, 2006; Roberts, Wanta, & Dzwo, 2002).

However, there has been not much accumulation of evidence for or against the audience-side hypothesis. The main goal of the present study is testing this assumption. For the test, this dissertation relies on two research traditions in political communication: information cost and agenda setting. Incorporation of the two traditions generates the following thesis: *learning the media agenda requires a minimal amount of information cost; thus, people who are less likely to seek out public affairs information from the media also will acquire the common social agenda*.

Individuals pay a certain cost to gain political information (Downs, 1957). It is a rational choice for an individual to minimize the cost in the process of information gain. Using the idea of information cost, Downs (1957) identified two types of political information: accidental and sought-for. He noted, "Accidental data are by-products of the non-political activities of a citizen; they accrue to him without any special effort on his part to find them. Hence, their time cost is ordinarily much lower than that of sought-for data" (Downs, 1957, p. 223). The incidental routes of information gain involve minimal cost; and this also should hold true for the process of learning from news media. Incidental learning of a common agenda presented by news media requires minimal information cost. The cost involved in the learning process reduces the likelihood that apolitical audiences will seek out political information from news media. With the lowest level of exposure to news, the apolitical part of the public who do not follow news are the

most prone to lose the common agenda. However, those who stay away from news still are exposed to, and learn, the common agenda, because incidental exposure does not involve a significant amount of information cost.

The evidence for the thesis will lend support to the argument that an ongoing specialization process in the new media environment does not proceed to a state of audience fragmentation where the public cannot hold shared experiences in society. This dissertation will investigate effects of online incidental exposure to information on the process of learning from media because, as indicated above, the Internet is the foremost medium that maximizes individuals' power to select media content and channels, using unique features such as interactivity. In this light, this dissertation aims to investigate whether online incidental exposure contributes to the likelihood of learning a common agenda. Further, effects of incidental exposure to news on people's recognition and recall of the specific information will be examined. If online incidental exposure is found to help people recognize and recall certain political information, the results can be taken as evidence for the Internet's function to facilitate informed citizens. This dissertation also explores predictors of online incidental exposure to public affairs information. Given findings of an increase in separation of news and entertainment audiences and its impact on political inequality (Prior, 2005, 2007), it is important to investigate whether different audience groups, characterized by their demographics and political predispositions, have a different probability of incidental exposure. Furthermore, this dissertation also explores online behaviors predicting the degree of incidental exposure.

The investigation of the fragmentation hypothesis contributes to understanding two important questions rising with the new information environment. The first is whether mass media will still have significant effects on individuals' public lives. The new technologies have eroded the centralized nature of mass communication, which

raises a question about the persistence of mass media effects (Chaffee & Metzger, 2001). Findings of this dissertation will enhance our understanding of this question in terms of mass media's agenda-setting effects. The second question is whether the Internet has positive or negative effects on people's knowledge of public issues. In a democratic society, the ideal citizens are those who are properly informed (Berelson, 1952). Without sufficient information about pubic affairs, people are less likely to make decisions that represent their interests (Bartels, 1996; Lau & Redlawsk, 1997). Examining effects of incidental exposure on people's recognition and recall of specific information, this dissertation will assist in our understanding of the role of the Internet in political communication.

OVERVIEW

In the chapters to follow, this dissertation will develop the arguments introduced here and investigate predictors and effects of incidental exposure to public affairs information on people's public opinion about a common agenda in society. In so doing, this study endeavors to contribute to an understanding of changes brought by the new media environment, in particular the problem of possible fragmentation.

In Chapter 2, this dissertation reviews available theoretical thoughts and empirical evidence relating to the problem of fragmentation. Though many concerns about possible fragmentation have been publicized since the rise of the new media environment, fragmentation has not been clearly identified as a problem in communication research. This chapter provides a definition of fragmentation, distinguishing it from other closely related concepts such as audience specialization and polarization. Before that, a brief review is presented about media environment changes driven by new digital technologies and discussions about possible fragmentation made thus far. Further, forces affecting possible fragmentation are discussed. This dissertation operationalizes the degree of

fragmentation by use of a theoretical framework of agenda setting. Introducing and using concepts of information cost and incidental exposure, this chapter theorizes that incidental exposure limits the progress of fragmentation and predicts persistence of society with a common agenda—a very important experience that should be shared in a community.

Chapter 3 introduces methods used in this dissertation to test hypotheses posited in Chapter 2. This dissertation relies on several methodological approaches and data sets, comprising a survey, a laboratory experiment, a content analysis, and a supplementary secondary survey data set. The survey was conducted from early December of 2008 to early January of 2009 as part of a larger project. The laboratory experiment was done during November of 2008. Chapter 3 details procedures of the different methods and provides discussions about operationalization of key concepts, such as the likelihood of acquiring a common agenda and incidental exposure.

In Chapter 4, this dissertation first replicates previous research on basic agenda-setting process and extends it to the new media environment. Homogeneity of the media agenda and positive associations between the media and the public agenda are two important bases for further arguments of this study. Aggregate-level analyses investigate the hypothesized relationships.

Chapter 5 investigates predictors of incidental exposure in the new media environment. Because the fragmentation hypothesis relies on broad changes brought by the new information environment, it is necessary to examine various factors influencing the occurrence and variance of incidental exposure. This dissertation argues, and also finds evidence, that overall time online is positively associated with incidental exposure, which contributes to the broad argument of the dissertation: *due to effects of incidental*

exposure, people will acquire a common agenda without paying a significant information cost. This study employs survey methods to test related hypotheses in this chapter.

Chapter 6 examines the impact of incidental exposure on public opinion. Testing the broad argument of this dissertation warrants a direct investigation of effects that incidental exposure has on the likelihood of acquiring a common agenda. For this, Chapter 6 employs laboratory experiments and manipulates subjects' incidental exposure to public affairs information on the Web. Because the concept of incidental exposure is difficult to measure, a laboratory experiment was designed, despite the external validity limitations inherent in such an experiment. The experimental study tests effects of incidental exposure on people's recognition and recall of political information as well as on agenda setting. This chapter finds evidence lending support to the arguments.

This dissertation concludes in Chapter 7 with a summary and discussion, focusing on how incidental exposure in the new media environment limits the advancing movement of fragmentation. This chapter recapitulates the major conclusions in this regard. Further, the implications of the findings are evaluated in relation to the news media's function in society. This chapter also returns to a basic question of the new media environment and democracy and discusses other related problems beyond fragmentation, such as polarization of opinion. In addition, limitations of study designs and analyses and possible future research questions are presented.

Chapter 2: The New Media Environment and Fragmentation

CHANGES IN THE MEDIA ENVIRONMENT

Recent changes in the information environment have raised an important question regarding the healthy operation of democracy. The development of digital technologies has triggered remarkable shifts in the process of public opinion formation. The Internet, one of the most comprehensive representatives of the technology-driven changes, has a variety of distinct features that may facilitate such changes in the process of public opinion formation. Digital technologies also have a significant impact on extant media, such as television, with the addition of numerous cable channels.

Literature has examined the impact of the new technologies on many facets of political communication and has further investigated possible influences on the functioning of democracy. While the technologies have brought considerable changes to our way of public life, their actual effects have not been fully documented yet. Even with this still obscure picture about the impact of the technologies, it is obvious that the volume of political communication has consistently grown. Assessing the impact of technologies on audiences, Neuman (1991) pointed out that the volume of communication has enormously increased with the development of the modern media. The volume increase in communications can be observed in the number of scientific journals (Price, 1963), online databases and their usage (Williams, 1985), and the percentage of the work force occupied with information processing. The latest and the most comprehensive addition to the modern media, the Internet, further accelerated the phenomenon of the communication volume increase. Coffman and Odlyzko (2002) documented that traffic on the Internet doubles each year. For example, the average traffic flow from the U.S. to SWITCH, the Swiss academic and research network, grew

from 1.51 megabytes per second in May 1996 to 32 megabytes per second in March 2001, and the storage capacity of a hard disk drive sold worldwide increased from 76,243 terabytes to 56.6 million terabytes (Coffman & Odlyzko, 2002).

New technologies also have enabled people to enjoy unprecedented levels of information availability. People can access an almost infinite amount of diverse information and messages with significantly fewer limitations due to required time and cost (Havick, 2000). In a global context, people under relatively authoritative political regimes, such as the Chinese, are able to enjoy more diverse information thanks to the Internet (Zhu & He, 2002). The Internet has given people information availability distinct from what television provided in the past (Havick, 2000). With new media technologies, the increase has been observed not only in communication volume and availability but also in communication diversity. Since cable television launched its first broadcast in the 1980s, audiences have seen explosive growth in the diversified cable channels. The diversification process escalated even further in cyberspace. The high diversity is directly related to people's opportunities to select certain media content compatible with their belief systems or interests. This phenomenon was found to have a significant impact on the political process, by allowing audiences to avoid news content for entertainment materials (Prior, 2005, 2007) and to be selectively exposed to partisan information (Stroud, 2006).

One of the most visible characteristics of the new technologies is interactivity. Digital technologies enable audiences to actively participate in the communication process. The definition of interactivity varies by researchers (Bucy, 2004; Downes & McMillan, 2000; Kiousis, 2002; Rafaeli, 1988; Sundar, Kalyanaraman, & Brown, 2003), but all of them are based on the two-way nature of the communication flow. This characteristic has triggered much research on different subjects. Ruggiero (2000) argued

that the interactive feature of the Internet can be best explained by the uses and gratification approach. The experience of going online has been found to facilitate young people's interactive and creative use of the Internet (Livingstone, Bober, & Helsper, 2005). Recently, Bucy and Tao (2007) proposed a mediated moderation model of interactivity and found that perceived interactivity functioned as a mediator and that individual audience characteristics such as self-efficacy worked as moderators. The networked structure of the Internet is another feature that has driven changes in the media environment. The impact of the characteristics listed above is further amplified by the nature of networks. Thanks to this feature, individuals no longer have to rely on mediating institutions to form a collective entity of individual content providers, such as the blogosphere. Horizontal and networked links among individual blogs made possible the emergence of the blogosphere. The network structure of the blogosphere has been captured as a snapshot in Adamic and Glance (2005). Further, individual blogs tend to form a network for addressing certain topics: for instance, the Iraq War (Tremayne, Zheng, Lee, & Jung, 2006). The linking patterns of blogs in a network were explored in Reese, Rutigliano, Hyun, & Jeong (2007).

FRAGMENTATION HYPOTHESIS

The new media environment driven by digital technologies has brought hot debates regarding resultant problems versus benefits to society. The danger of creating a fragmented society is one of the concerns and of main interest in this dissertation. Due to the characteristics of new technologies, people now can enjoy an unprecedented number of choices in selecting media channels and content. Illustrated as the "Daily Me" in Negroponte (1995), audiences can even tailor a daily dosage of their media diets. Filtering in wanted content and filtering out the unwanted has never been easier.

The extreme ease of media selection has brought up legitimate concerns about the future of audiences and society. Turow (1997) predicted this process will lead to imminence of "gated communities" and "lifestyle segregation." Sunstein (2001) also noted: "The problem here comes from the creation of diverse speech communities, whose members make significantly different communication choices. A possible consequence is considerable difficulty in mutual understanding. When society is fragmented in this way, diverse groups will tend to polarize…" (p. 48). Both Turow and Sunstein were worried about the possibility that new technologies drive the advent of segmented audiences and lead to society failing to have a common experience; this is known as the fragmentation hypothesis. Extreme filtering enabled by new technologies is likely to prevent people from sharing an experience and from understanding each other. This fear was echoed in other research (Bennett, 1998; Neuman, 1991; Prior, 2007). Neuman (1991, p. 167) also stated, "Concern has arisen that the common cultural and political identity of Americans, traditionally reinforced by the mass media, may be lacking." It is not likely that a fragmented audience can have constructive discussions about the same social issues and reach a consensus to solve problems (Katz, 1996). The result is clearly deleterious for social cohesion and the proper functioning of democracy (Bimber, 1998; Castells, 1996; Putnam, 2000; Shapiro, 1999; Sunstein, 2001).

DEFINITION OF FRAGMENTATION

Social consequences of fragmentation are ominous, but the hypothesis should be tested against reality. The first step of the testing should be a clear conceptualization of fragmentation. In this sense, it is problematic that the term of fragmentation is not always used in the same way in the literature. It is often confusingly used with the closely-related concepts of specialization and polarization. For instance, Sunstein (2001) defined fragmentation as "the creation of diverse speech communities," which leads to difficult

mutual understanding among the communities. Webster (2005, p. 367) describes fragmentation as "a process by which the mass audience, which was once concentrated on three or four viewing options, becomes more widely distributed." Webster (2005) views fragmentation as a redistribution of audience members from a few groups to more at an aggregate level without any positive or negative implication. That is why Webster argued that fragmentation can have potential social benefits of promoting diversity. To explain people's media consumption behavior at an individual level, Webster (1986, 2005) introduced a concept of audience polarization to describe people's tendencies to view specific channels. Prior (2007) followed Webster's (2005) use of audience fragmentation, but suggested "audience specialization" to indicate individuals' viewing behaviors, pointing out a possible confusion between Webster's (1986, 2005) audience polarization and partisan polarization, a traditional variable in political communication research. Sunstein (2001) also used the concept of group polarization to explain people's tendencies to move toward extreme positions in a group, a tendency having a similar mechanism to partisan polarization.

Tewksbury's (2005) definition of fragmentation includes a more negative connotation. Referring to the audience rather than to the phenomenon itself, he noted, "Fragmented audiences are unlikely to consume a common diet of news, potentially leaving them underinformed about central issues facing a nation" (Tewksbury, 2005, p. 332). Although fragmentation is explained indirectly, it is clear that he was concerned about a negative influence of the fragmentation phenomenon. For this reason, Tewksbury (2005) appeared to use a different term of "specialization," with a rather neutral connotation, to depict the redistribution of audience members. Specialization generally refers to a phenomenon that audiences or media concentrate on certain content differing from others for use and for production (Tewksbury, 2005).

For a clear understanding, it is helpful to use two distinct concepts of specialization and fragmentation, both of which are distinct from audience polarization. Specialization refers to the redistribution of audiences by the process of volume increase in communication and individuals' selective exposure to media. In this way, specialization clearly depicts the phenomenon that either media or audiences "focus" on certain content without any positive or negative connotation. Further, specialization works as a necessary condition of fragmentation, but is not sufficient by itself. Thus, in this dissertation, fragmentation refers to division of the general public into small groups not communicating with each other. The important point is its negative connotation. This conception enables fragmentation to clearly describe the difficulty in mutual understanding.

LOSS OF COMMON EXPERIENCES

Given the conception of fragmentation, the single most serious problem is the loss of a shared, common experience, which cannot be obtained among the small and exclusive communities. Many scholars have expressed concerns about this exact point. Fragmented audiences are less likely to know about broad topics and have common subjects to share with each other (Davis, 1999). By living in exclusive speech communities, people lose more and more opportunities to share a common experience (Sunstein, 2001). Fragmented audiences' attention to political issues is less likely to be widespread and stable (Havick, 2000).

Further, the loss of shared experiences directly affects people's sense of a larger community, and inevitably national integration. It may be very difficult for a community consisting of fragmented audiences to achieve social and political unity (Chaffee & Metzger, 2001; Katz, 1996). Fragmentation also weakens national integrity (Katz, 1996), by hampering a society from reaching a consensus. Without a common experience and

sense of community, it may be impossible to derive consensual solutions to social and political problems. The lack of stable attention to common social problems will make it difficult to reach a consensus (Havick, 2000). As people increasingly seek out information from likeminded others, it may be more difficult to hold large systems together (Shaw & Hamm, 1997). Fragmentation erodes the common cultural and political identity of community members (Neuman, 1991).

The consequential problems of fragmentation may emerge as twofold in relation to changes in the media environment. First, it is possible that general audiences fragment to two groups of news-oriented and entertainment-oriented audiences, as illustrated by Prior (2005, 2007). He found that as people have more choices, they tend to increasingly abandon news channels for entertainment content. The implication of this finding is significant, suggesting that the proportion of the properly informed public in society will decline as more choices in media are presented to audiences. The ideal citizen is an informed citizen (Berelson, 1952). The decline of informed citizens due to expanded media choices will eventually threaten the basic principles of democracy (Prior, 2007). The changes in the communication environment have raised a concern that people may leave news and politics for entertainment, which will threaten democracy, according to the informed citizen model of democracy. In this situation, people who abandon news for entertainment are very likely to lose opportunities to acquire a common social experience, because they cannot share the experiences provided by news media. They may lose their sense of community that they belong together with people in news group, and thus the social and national unity of society will dwindle.

Second, the other dimension of fragmentation comes from people who follow news and political information. Even inside the news group, people who seek out information compatible with their belief systems may have the same problem because

their perspectives and opinions are likely restrained to small, exclusive communities of a likeminded, homogeneous cluster of people. Further, as group polarization advances (Sunstein, 2001), each small group has increasingly more extreme opinions about public affairs, which may worsen the situation.

New communication technologies have developed effective tools to sort out online information, such as search engines; otherwise the abundance of information may become chaotic (Anderson, 2006). An unprecedented number of options can have a negative impact on people's choices and actually decrease people's confidence and satisfaction, overwhelming people with messy abundance (Iyengar & Lepper, 2000; Schwartz, 2004). However, if people have an effective tool to sort information, they tend to prefer more choices rather than fewer (Mogilner, Rudnick, & Iyengar, 2008). Extrapolating the discussion to the online environment, we can predict that people will prefer more choices than fewer if they have good enough sorting tools, such as Google. Although it is still questionable how effective current sorting options are and how effective people perceive them to be, the preference for more choices will eventually lead to an increase in the effects of selective exposure to political information. With more choices in hand, people are much more likely to attend to news media channels compatible with their belief systems and interests. The selective exposure phenomenon inevitably leads to a question about echo-chamber effects, and a further problem of fragmentation and polarization in public opinion. Given many choices in political communication, people will seek out the information that fits their political predispositions and can easily get this from likeminded people or news media outlets (Katz, Gurevitch, & Hass, 1973; Zillmann & Bryant, 1985).

THE FUNCTION OF NEWS MEDIA

News media play a central role in the discussion about the consequential problems of fragmentation. Sunstein (2008) argued that an increase in communication options drives growth of diverse choices, which inevitably decreases shared experiences among audience members. This argument implicitly assumes that a handful of news media have provided the public with common experiences to share, and thus with the opportunity to form a social unity. The assumption continues that increased media channels no longer have a homogeneous agenda. Literature on the first point is abundant. Since the first empirical evidence (McCombs & Shaw, 1972), agenda-setting research has consistently demonstrated the association between the media and the public agenda.

However, the second assumption does not have sufficient empirical support yet. Research from widely different fields has argued that mass media have contributed to blurring borders between ethnic, geographic, and economic groups or classes, and therefore have facilitated the homogeneity of public opinion (Abramson, Arterton, & Orren, 1988; Ginsberg, 1986; Kornhauser, 1959; Meyrowitz, 1985; Owen & Wildman, 1992; Schudson, 1978). The news media have advanced a shared subject among audience members, facilitating the formulation of communities (Bryce, 1888; Lowell, 1914; Tarde, 1898). In particular, television has been frequently identified as a powerful medium for this function. Beniger (1983) illustrated that television has the power to create a shared symbolic environment, and Liebes (1992) pointed out that audiences pay attention to nightly television newscasts as social rituals.

The agenda-setting function of media (McCombs & Shaw, 1972) is a perfect fit for a theoretical explanation of this phenomenon. News media facilitate achievement of a community consensus about the most important problems, with an agenda-setting influence on public opinion (McCombs, 1997). Incremental changes in exposure to

political information in news media are found to be significantly associated with incremental variation in community consensus about social priorities (Lopez-Escobar, Llamas, & McCombs, 1998). For a community, consensus on the most important problems is necessary to sustain any discussion on topics (Tsfati, 2003). Shaw and colleagues (1999) argued that individuals meld their agendas with those of a larger group through appropriate media to reduce social dissonance. In relation to this point, more exposure to newspapers leads to greater agreement with the newspaper agenda among different gender, race, and age groups (Shaw & Martin, 1992).

The news media have traditionally provided the pubic with shared experiences necessary for a community, especially for a nation. The common agenda that the news media formulate has been distributed to the public and has created experiences that members of a community eventually share. The question here is whether this common agenda persists both in the media and in the public in the new information environment. New media technologies are, in general, said to facilitate the specialization/fragmentation phenomenon, but the trend is not without limiting factors (Neuman, 1991). It is necessary to examine the factors to better understand the impact of the new information environment on this process of public opinion formation.

FACTORS OF FRAGMENTATION

Given the environmental changes affecting both media content and individual media use, audience fragmentation is most likely to occur when both media and audience specialization exist (Tewksbury, 2005). Specializations of audiences and news outlets can be represented by homogeneity (or heterogeneity) of agendas, when fragmentation is conceptualized as the loss of common experience in a community. This dissertation argues that audience specialization is not likely to advance to the extent of threatening peoples' acquisition of common experiences—a key representative of fragmentation. The

process of fragmentation is a product of interaction between individuals and environments. Thus, whether audience fragmentation occurs depends on the interplay between social forces influencing individual and environmental factors. Therefore, it is requisite to identify social forces that affect the interaction process.

Literature has maintained that social phenomena should be understood as products of interaction between individuals and surrounding environments (e.g. Neuman, 1991; Zaller, 1992). As a social phenomenon, audience fragmentation also can be better explained by equations describing the interactions. Appropriate establishment of such equations first requires identification of factors that will be included in the function. The next task is the clarification of relationships among the factors. For effective identification of the factors, this study proposes a typology of social forces that may influence the process of audience specialization. Viewing social phenomena as interaction processes, these factors will work at two different levels—individual and social. Each factor functions as either driving or inhibiting audience specialization. Hence, the factors can be classified by a 2×2 matrix consisting of individual v. social and centrifugal v. centripetal. This typology may help to identify factors affecting specialization.

New digital technologies have been consistently recognized to have potential to drive the process of specialization. The intrinsic nature of the Internet was identified as a force promoting specialization, relating to the possible negative consequence of fragmentation (Neuman, 1991; Sunstein, 2001; Turow, 1997). The prominent characteristics of digital technologies include interactivity, selectivity and accessibility to a wide variety of information. These characteristics have made possible an enormous increase in communication volume (Neuman, 1991) and, as a result, abundant media

choices presented to audience members (Prior, 2005, 2007). In this sense, technologies work as an ultimate centrifugal force at a social level.

At the intersection of individual and centrifugal factors in the typology, we can note people's possible tendency toward selective exposure and attention to messages from outside. Since the early days in communication research, the literature has investigated effects of selective exposure from a variety of perspectives (Festinger, 1957; Nimmo, 1990; Taylor, 1981). Though the theories are different, they share the basic belief that people selectively expose themselves only to the information they want. With enhancement of technologies, this theoretical possibility was advanced to a prediction that people filter out all unwanted messages and attend to remaining ones. This is the origin of concerns about fragmented audiences and their threat to democracy (Sunstein, 2001; Turow, 1997). The literature has reported findings in support of selective exposure in the new information environment. Individuals were found to pay attention to online political information consistent with their beliefs (Graf & Aday, 2008). Online news readers are less likely to begin with public affairs news when spending their time reading and recalling it (Tewksbury & Althaus, 2000). Reading online versions of newspapers is less likely to influence individuals' conformity with issue priority presented by media (Althaus & Tewksbury, 2002).

This typology also has centripetal parts. Economic principles that reign in media corporations do not promote specialization indefinitely (Neuman, 1991). The nature of corporations is to pursue maximum profit, thus minimizing the cost of production. News media are likely to maximize the utility of information gathered through news coverage in order to minimize the production cost. Pursuing economies of scale inevitably restricts their coverage of news, which strongly limits diversification of information and maintains redundancy of content across outlets. One example of this trend is the homogeneous

media agenda. The issue priorities of media were found to be highly associated between online newspapers and online wire services (Lim, 2006) and between Internet bulletin boards and traditional media (Roberts, Wanta, & Dzwo, 2002).

At an individual level, audiences also have restricting factors. People's cognitive ability, motivation and opportunity are highly restricted, which may limit specialization. Neuman (1991) argued that learning is only partial, because people are only occasionally attentive to political information due to these limitations. As a result, interactive features of the Internet do not always advance interactive behaviors of the audience. Although people like the option of interactivity, "they would prefer not to have to interact," noted Neuman (1991, p.112). Most individuals fall short of full-fledged use of interactivity and selectivity, which leads to one limitation of specialization. The concept of bounded rationality and satisficing also lends support to arguments of psychological limitations. Usual constraints in time and cognitive ability make it impossible for humans to take into account all outcomes and then make perfectly rational choices, and thus an individual's rational behaviors are strongly restricted by bounded rationality (Simon, 1955). Hence, people set an acceptable standard and then stop with the first acceptable choices, thus "satisficing" their original goals (Newell & Simon, 1972). The satisficing process also may lessen the specialization phenomenon, because bounded rationality and satisficing circumscribe interactive and selective behaviors. The effects of bounded rationality and satisficing also are being observed in the new media environment. When using media content on the Internet, young people showed the pattern of behaviors based on bounded rationality and satisficing (Agosto, 2002).

The new information technologies have opened up a new world for audiences. With unique features such as interactivity, it has awakened active parts of audiences. The newly animated audiences have brought phenomenal changes in many areas in society.

One of them is audience specialization. The Internet ultimately facilitates audience specialization, interacting with people's tendency toward selective exposure/attention. However, the phenomenon of specialization is not without limit. The nature of capitalistic media corporations significantly restricts production of specialized media content, and further, the psychological nature of individuals also contributes to a limitation of audience specialization (Neuman, 1991). The process of interactions between individuals and the surrounding environment will reveal the shape of audience specialization, and further, will provide clues to concerns of fragmentation in society.

PERSISTENCE OF THE COMMON AGENDA

Technology-driven changes in the media environment have brought significant challenges to classic theories of mass communication and forced scholars to rethink the viability of these theories. As Chaffee and Metzger (2001) noted, a choice-abundant media environment has enabled unprecedentedly active audiences and eroded the centralized power of the mass media. For instance, American broadcasting once dominated by three networks is now diversified into numerous channels in different formats of cable, satellite, and online television. The decentralized nature of the new media environment directly challenges fundamental assumptions of mass communication theories. Agenda setting assumes that people get their news from a few number of information sources, and cultivation theory assumes that content of mass media has a worldview that is limited to certain themes, such as violence (Chaffee & Metzger, 2001). Both mass communication theories commonly assume a centralized nature of content across all media outlets (Chaffee & Metzger, 2001). Therefore, when new technologies threatened the traditional structure of mass communication, the theories have seemingly become in danger of losing their ground.

At the same time, with the decline of the centralized media environment, theories that put more emphasis on active audiences are on the rise. Examples are uses and gratification and selective exposure. Early at the beginning of the Web phenomenon, Morris and Ogan (1996) envisioned that uses and gratification approaches would be useful in research in the Internet age. Along this line, much research has been devoted to studies on new media employing the uses and gratifications approach. For instance, Papacharissi and Rubin (2000) explored predictors of Internet use and found five motives for using the Internet. Kaye and Johnson (2002) examined the uses and gratifications of political information on the Internet. Using an online survey of politically interested Web users, the study ran a factor analysis to find four different primary motivations for accessing online sources for political information. Ko, Cho, and Roberts (2005) used a structural equation model to investigate the construct of interactivity, a primary feature of the new media environment. They conducted international studies in the U.S. and Korea and found that people with a stronger motivation for information are more likely to engage in human-message interaction online.

Also on the rise is research based on the selective exposure paradigm. Many choices in the new media environment have made possible audiences' active selection of media channels and content. In relation to political information, the change also enabled partisan selective exposure, which was possible over a century ago in America in the 19th century newspapers (Bennett & Iyengar, 2008). Empirical evidence has been accumulated for the argument of partisan selective exposure. Using the 2004 National Annenberg Election Survey, Stroud (2006) found that individuals' political predispositions predict their exposure to specific media. Graf and Aday (2008) designed a series of quasi experiments and found that selective attention occurred when people are exposed to political information online. In an experimental study, Iyengar and Hahn

(2009) found that conservatives and Republicans are more likely to use news from Fox News and to avoid CNN and NPR, while liberals and Democrats showed the opposite tendencies.

The changes in the media environment and the accumulation of empirical evidence of active audiences apparently lend support to the argument of the decline of mass media and the rise of niche media. However, the phenomenon does not necessarily work against the viability of all classic communication theories. The origin of the observed phenomenon is the abundance of options in selecting media channels and contents. Hence, if a theory is based on factors that are prone to changes in media options, it will be significantly affected by the current phenomenon. However, if a theory is not dependent upon factors sensitive to these changes, the story will be different. In light of this, Bennett and Iyengar (2008) noted that partisan selective exposure has an impact on the influence of the tone or valence of news, but not so much on the volume of news. Because of many media options in the new media environment, people can select only the news media that have political tones comfortable to them, which influences the viability of persuasion theories. Chaffee and Metzger (2001) stated that a fundamental assumption of agenda setting is that people get their news from a few media outlets. However, though people obtain public affairs information from many more sources, they can learn a common agenda as long as the large number of news outlets maintains homogeneous agendas. Then, the true nature of the assumption of agenda setting is the homogeneity of the media agenda in the age of numerous media options.

Despite the growing pressure of the driving forces, this dissertation argues, the common agenda will continue in the media and in the public. This is because, for the public side, acquisition of the common agenda requires only minimal cost in terms of individuals' opportunity, motivation and ability to gain it. For the media side, news

organizations tend to apply limits in their specialization of content, minimizing production cost under economic pressures.

It is almost impossible to completely escape the effects of the ubiquitous media. Even though people do not actually seek out information, they are very likely to be informed by incidental or passive learning (Blumler & McQuail, 1968; Downs, 1957; Krugman & Hartley, 1970; Tewksbury, Weaver, & Maddex, 2001; Zukin & Snyder, 1984). Although the media environment with many choices enables separation of news and entertainment audiences (Prior, 2005, 2007), all-entertainment and no-news audiences are not likely to form a majority or a plurality. Even the no-news audiences also have the possibility of being exposed to the common agenda via routes other than the active, selective use of news media. These might suggest that acquisition of the agenda requires only a minimal cost. Consistent findings of agenda-setting effects among news media also support agenda homogeneity across media outlets. With high redundancy among news media under economic pressures on the media side, the argument predicts perpetuity of the common agenda in media content.

Research has reported that the new media environment has a potential driving force for the audience and media outlets to specialize in specific content (Althaus & Tewksbury, 2000; Tewksbury, 2005). However, there are assumptions to be met before the potentials of audience specialization proceed to cause fragmentation in reality (McCombs, 2005). The assumptions are noteworthy because they can be used as a testing ground for hypotheses for or against fragmentation.

The first assumption is that the agendas to which people are exposed on the Web are highly divergent rather than the highly redundant agendas found in the traditional news media. The second is that large numbers of people have access to the Web and regularly go to many different sites there for news, information, and commentary

(McCombs, 2005, p. 544-545). The first is about the media side and the second about the audience side, as discussed in a previous section about factors affecting fragmentation.

For the first assumption, up-to-date findings show homogeneity of news agendas rather than heterogeneity through the Web. A cross-lagged analysis finds that the agenda-setting effect occurs between online newspapers and online wire service (Lim, 2006). Studies also found an agenda-setting process between Internet bulletin boards and traditional media (Lee, Lancendorfer, & Lee, 2005; Roberts et al., 2002). Further, political blogs with a relatively high potential to show fragmentation were found to have almost the same agenda as mainstream media, and with blogs that belong to the other camp of political ideology, during the 2004 presidential campaign (Lee, 2007). Another study on the 2004 election found that correlations between the media agenda and the agenda of blogs run by the Bush and Kerry campaigns were +.82 and +.92, respectively (Sweetser, Golan, & Wanta, 2008).

Further, previous research has provided evidence that traditional news media have consistently shown very similar agendas in covering different issues. Reese and Danielian (1989) documented that *The New York Times* had a significant impact on the agendas of other news media in research on the cocaine issue in coverage by five major newspapers, the three TV networks, *Time* and *Newsweek* magazines. In a study of 52 Ohio journalists, Whitney and Becker (1982) found that editors of wire services had strong influences on the decision-making process of the journalists. For international news coverage, the agenda of *The New York Times* had positive correlations with news agendas of three evening television newscasts (Golan, 2006).

The audience-side assumption consists of three parts: access to the Internet, habits of communication, and scattered audiences across diverse Web sites (McCombs, 2005). For the first part, wide differences in Internet access between demographic groups are

still found. Those who are younger and have higher incomes form a majority of the online audience, suggesting that a digital divide still exists (Salwen, Garrison, & Driscoll, 2005). For the second part, while some studies suggest that use of online news sites have the potential to establish specific habits of communication such as specialization (e.g. Tewksbury, 2005), it is not yet conclusive that most people habitually use Internet news the same way they use traditional news. For the third part, recent findings suggest that audiences are likely to visit a few key sites rather than divergent Web sites. The number of links that the top five newspaper Web sites have was found to account for 41.4 percent of the total links to the top 100 newspapers, while the circulation of the five largest newspapers totals 21.5 percent of the circulation of the newspapers (Hamilton, 2004). An analysis of 1,493 Web news stories also found that 31 percent of the stories accounted for 80 percent of all the links to stories (Tremayne, 2004). In short, there is not enough evidence to make conclusive arguments about this assumption. The question at the audience side warrants more tests.

The homogeneity of the media agenda works as a basis for a subsequent series of arguments in this dissertation. This is because the dissertation assumes that people's main route to learn a common agenda is through the media. If there is no evidence of the homogeneous media agenda, the whole argument in this study will be on shaky ground. However, there is an accumulation of evidence supporting the homogeneity of the media agenda.

Another basis of subsequent arguments of this dissertation is a positive association between the media and the public agenda—a basic agenda-setting relationship at aggregate levels. Since the seminal Chapel Hill study (McCombs & Shaw, 1972), numerous studies have replicated it and found the relationship repeatedly (McCombs, 2004). Evidence for the agenda-setting effect also has been found in the current media

environment with diversified media channels and contents. Using two surveys, Coleman and McCombs (2007) found the media's issue agenda has a strong correlation with the public agenda for young adults. It is notable that the survey respondents are the heaviest Internet-using population and used traditional media such as newspapers less frequently than their older counterparts. Holbrook and Hill (2005) examined effects of entertainment media and found that frequency, consistency, and duration of media treatments of issues influenced agenda-setting effects. Further, Ghanem and Wanta (2001) examined whether exposure to Spanish-language cable news was associated with local viewers' perception of issue importance and found that the exposure was related to an agenda-setting effect for Spanish-language cable news. The association between the media and the public agenda is observed in different populations of the new media environment from online-heavy to entertainment-oriented to Spanish-speaking.

For the assumption of fragmentation at the media side, more evidence has been accumulated for the homogeneity of the media agenda. In the traditional media environment, news agendas have been stable across all media outlets due to the strong influence of elite newspapers and wire services on the agendas of other news channels. Even in the online world, the agendas of traditional media are highly associated with online wire services, online newspapers, Internet bulletin boards, and highly idiosyncratic blogs (Lee, 2007; Lee et al., 2005; Lim, 2006; Roberts et al., 2002). In the new media environment, the news media still have a homogeneous news agenda across different outlets. Further, based on the vast literature of agenda setting, it is very likely that the media agenda is highly correlated with the public agenda.

Hypothesis 1: The media agenda will be stable and homogeneous across media outlets.

Hypothesis 2: The media agenda will be positively associated with the public agenda.

EXPOSURE TO NEWS MEDIA

To evaluate assumptions of fragmentation on the part of the audience, it is important to investigate the mechanism of people's exposure to the media agenda and its effects on people's learning of the common agenda. The first and most important step in gaining shared experiences from the media is exposure to the common agenda in the news media. Without exposure either directly or indirectly, the process of learning the common agenda cannot start or proceed any further.

Literature on attitude change can help explain the process of learning the common agenda. Hovland and his colleagues (1953) proposed a series of discrete steps of the persuasion process, from exposure to reception to yielding or accepting. Exposure is proximity to a message and reception is "getting" it, followed by accepting or yielding to it (Hovland, Janis, & Kelley, 1953). McGuire (1968) also conceptualized the process of attitude change as steps of reception of messages and yielding to them. In a news media context, while exposure is defined as situations in which a person came into contact with news content through media (Allen & Waks, 1986), reception is identified as situations that require attending to, comprehending, and retaining news (Price & Zaller, 1993). Accordingly, learning the common agenda may follow the sequence of exposure—reception—acceptance, because it is ultimately a process where people agree on current important issues presented by news media. Hence, if exposure to news media does not occur or occurs only sporadically, individuals are very likely to lose the opportunity to learn the agenda.

In the process of shaping people's communal sense, agenda setting plays an important part in that it is directly related to the minimum requirement of discourses—the agreement on problems or topics. A community requires a consensus on important issues of the day to maintain rational discussions about public affairs (Tsfati, 2003). The agenda-setting function of the news media contributes to achieving consensus on the most important problems in society, and thus to building a sense of community (McCombs, 1997). Exposure to the news media positively contributes to agenda-setting effects so that people with greater exposure are more likely to learn the common agenda. The positive relationship between exposure and the magnitude of agenda-setting effects has been well documented (Aigner, 1976; Lasorsa, 1991; McClure & Patterson, 1976; Shaw & Martin, 1992), though some weak or conflicting findings also have been reported (Erbring, Goldenberg, & Miller, 1980; Hill, 1985; Iyengar, 1979) and the robustness of exposure measurements is still a matter of debate (Price & Zaller, 1993; Zaller, 1996). People are more likely to agree with the media agenda and with the agenda of others in different demographic groups, as their exposure to media content increases (Shaw & Martin, 1992). Lasorsa and Wanta (1990) summarized that stronger agenda-setting effects along with an increase in media exposure is one of the most consistent findings in agenda-setting research. Through the process of agenda setting, more exposure to news media leads to a greater likelihood of learning the common agenda.

Despite the overall positive relationship between exposure and agenda-setting effects, it is not clear how much exposure is necessary for people to learn the common agenda. Learning involves cost. Learning the common agenda also requires individuals to pay a cost. Downs (1957) articulated the concept of information cost involved in the process of becoming informed. Information costs work as negative factors in an equation predicting acquisition of the common agenda. Models of political learning are helpful in

understanding how the information costs influence the process of learning the common agenda. A model based on an opportunity, motivation, and ability framework has been widely cited in literature on political learning (Delli Carpini & Keeter, 1996; Luskin, 1990). The model suggests that an individual's political learning can be explained by a function of his or her opportunity, motivation, and cognitive ability in relation to information gain. Information costs are involved in each of the three factors. For instance, if the motivational cost is higher, learning output will be lower. Building on this model, Prior (2007) proposed an updated model that postulates that the media environment, a variable of opportunity, moderates effects of motivation and ability on political learning. When people have more choices in selection of media channels and content due to changes in the media environment, a significant portion of audiences abandons news for entertainment. This compositional change generates the moderation effects of the media environment on people's learning processes (Prior, 2007). The model is useful for taking into account environmental changes driven by new communication technologies.

Applying this model to the discussion of the common agenda learning, effects of individuals' motivation and ability on learning the agenda are contingent on the information environment. However, the moderation effect of the information environment, an opportunity factor, will be negligible, when information costs required in the learning process are minimal. In other words, people will acquire the common agenda regardless of the selectivity of the information varying upon the information environment, when they can be exposed to such information with minimal cost. Even when they do not choose to read news, people will be exposed to the news agenda. If this is the case, the moderation effect of the information environment is no longer important as far as the common agenda is concerned. Then, the question is how much cost individuals should pay for the common agenda. This study argues that the cost is

"minimal," because learning routes other than active information seeking also significantly contribute to the acquisition of the common agenda. Further, the alternative routes involve minimal or no information cost. Hence, people will learn the common agenda because they do not have to pay considerable cost for active information seeking.

ALTERNATIVE ROUTES OF LEARNING

Acquisition of the common agenda is possible through very different routes of learning. Individuals obtain public affairs information either from the mass media or from other people for updates of current events. Literature on media effects has documented the impact of the first route (e.g. McCombs & Shaw, 1972; Zaller, 1992). On the other hand, people also acquire information from other people such as family members and coworkers. The two-step flow model of public opinion illustrated effects of interpersonal communication in learning about public affairs (Katz & Lazarsfeld, 1955). This categorization of learning routes represents channels of information gain. Another way to identify routes of learning is through individual behavior. People can learn about important issues either by intentional or by incidental exposure. Theorizing effects of information costs on people's political action, Downs (1957) identified two routes of information gain: accidental and sought-for. Accidental learning also is called incidental, passive or by-product, in that information is not obtained by individuals' active processes. Downs (1957) defined incidental information as by-products of individuals' non-political activities and explained that it does not cost any special effort to find. Learning from media can be either intentional or incidental.

While learning from media has usually been conceptualized as an active process (Atkin, 1973; Levy & Windahl, 1984), literature also has documented that incidental exposure provides people with an alternative route to get informed (Blumler & McQuail, 1968; Krugman & Hartley, 1970; Tewksbury et al., 2001; Zukin & Snyder, 1984). Using

media environments that distinguished north from south in New Jersey, Zukin and Snyder (1984) found that incidental or passive learning significantly contributed to people's learning about political affairs. Effects of incidental exposure also were found in online settings. People's self-reported incidental exposure during Internet surfing had a significant impact on their recall of current affairs (Tewksbury et al., 2001).

The contribution of incidental exposure to individuals' learning of the common agenda has a substantial meaning in the debate of fragmentation because it involves minimal or no cost regarding individual factors such as motivation and ability. Downs (1957) suggested four routes to incidental exposure: governing activities, actions of other people, entertainment sources, and decision making about production and consumption. While Downs (1957) defined entertainment sources—for instance, the "newsreel in a motion picture theater"—as costless, Prior (2007) argued that incidental exposure to such information attached to entertainment sources actually costs individuals utility of entertainment—the opportunity cost. With efficient tools to sort out media content in the choice-abundant information environment, entertainment-oriented individuals are very likely to select entertainment content (Prior, 2007). Nevertheless, there are still alternative routes for incidental exposure. Information gain during the process of production and consumption decision-making (Downs, 1957) is left to provide means of incidental exposure to the common agenda. Further, if information content is not detachable from entertainment sources, entertainment-oriented people are still likely to learn the common agenda even when they are tuned to entertainment channels. Research on soft news or infotainment has reported evidence supporting the existence of such incidental exposure to news. Many politically-inattentive people are exposed to information about political issues, such as foreign affairs, when entertainment-oriented soft news programs, such as tabloid newspapers, cover public affairs (Baum, 2002,

2003). Incidental exposure still occurs, because information is mixed in with entertainment content.

By definition, incidental exposure to public affairs information is attained without the intention to seek it. Therefore, it should have a minimal relationship with individual characteristics, such as political predisposition, while it maintains significant association with overall time spent on/or interacting with the medium.

One of the most visible changes in the recent media environment is the rise and prevalence of the Internet. Full of interactive digital utilities, the Internet has become a central element in contemporary political communication. Regarding the question discussed above, what matters is whether the Internet has environmental factors facilitating incidental learning. To address that question, it is first necessary to clarify the concept and mechanism of incidental learning.

There are many different studies of incidental learning under different labels between and within disciplines. Bettman (1979) defined it as learning that occurs with minimal conscious allocation of attention. Others defined it as learning "without learning instructions" (Frensch, 1998) and "without intent to remember" (Jenkins, 1933). The term used also varies by researcher: low involvement learning (Krugman, 1965; Robertson, 1976), spectator learning (Posner, 1973), and incidental learning (McLaughlin, 1965). Despite the variation, all refer to a phenomenon of learning passively about the environment without significant involvement and intent to learn. The conceptualization of incidental learning is often confusingly used with the idea of implicit learning. Implicit learning indicates a situation wherein learning occurs just above the perceptual threshold (Frensch, 1998). The concept opposite to implicit learning is explicit learning, which is intentional and often guided by a hypothesis. Many scholars have proposed different definitions of implicit learning. For instance, Kelly and colleagues (2001) distinguished

implicit learning from incidental, by defining incidental learning as learning without the intention to learn and implicit learning as learning without awareness. Though there is some discrepancy in definitions of implicit learning among scholars, incidental learning is generally accepted as learning without the intention to learn. This definition is conceptually consistent with that used in political communication research.

Based on the rational choice theory, Downs (1957) introduced the concept of information cost into people's political decision making. The process of becoming informed on public affairs is costly, and thus individuals calculate the benefits they can gain from seeking out the information. Therefore, it is natural that rational citizens want to minimize the information cost while pursuing maximum benefits. The information is costly only when individuals spend their resources to actively search for it. Without paying costs, people still can obtain information as by-products of non-political activities. It is free information gained by incidental learning (Downs, 1957). The concepts of information cost and incidental learning have been used in much political communication research. Fiorina (1990) noted that the public often receives information in the course of doing other things, which involves no question of information costs or of deciding to gather information as opposed to doing something else. Popkin (1994) also stated that most of the information voters use when they vote is acquired as a by-product of activities they pursue as part of their daily lives. Most of the political communication literature views incidental learning as a process without intent to learn. Adopting the Downsian idea, most studies in political communication tend to conceptualize incidental learning by explicitly connecting it to the cost-benefit calculation of a rational citizen. Empirical research also has illustrated this trend. In a study about effects of soft news on people's political knowledge, Baum (2002) argued that people learn about public affairs through entertainment-oriented information to which political issues are attached. Due to

incidental attention without increasing the cost, it is possible to provide the public with cheap information.

In general, most studies accept the conceptualization of incidental learning as unintended information gain (Frensch, 1998). Following the extant literature in political communication and psychology, this dissertation used the conceptualization of incidental learning as that learning occurring without intention to learn or in the absence of instructions. In reality, incidental learning is not clearly separated from an intentional process in most cases. People actively searching for current events news are more likely to encounter such information (Tewksbury et al., 2001). Further, the conception of incidental learning may raise the question that all forms of news exposure are incidental--too broad--because people do not know the news in advance, and thus have no intention of learning it. To avoid such confusion, this dissertation operationalizes incidental news exposure online as encountering news while going online for another purpose.

The discussion on the concept of incidental learning sheds light on how this passive learning occurs in the communication process. Since incidental learning refers to unintended acquisition of information, individuals should be exposed to such information via ways involving no intention to learn. Downs (1957) identified four ways in which people incidentally gain free political information without paying any cost: (1) activities of the government, (2) activities of other people, (3) entertainment sources, (4) the process of making production or consumption decisions. Among them, sources (1), (3), and (4) are possible via the media. Source (2) is only by interpersonal communication or personal involvement. Downs's identification of ways to gain incidental information is useful, but it does not provide a clear explanation of the mechanism of incidental learning, because his categorization is more focused on sources of information rather than how the incidental learning happens.

A considerable amount of literature has been devoted to this question in the area of marketing and advertising research. Many studies have employed the concept of incidental learning and have accumulated empirical research about it. Research on incidental exposure in marketing has investigated if and how much such exposure effects people's attitudes and decision making in relation to product purchases. The trend has driven much research seeking explanations of the mechanisms of incidental learning. Conceptualization of incidental learning suggests that the key element is the minimal relationship of information gain with conscious involvement and intent to achieve the current goal. Hence, incidental learning about public affairs can occur in two different ways: (1) through reactions to interruptions and (2) through low attention to passive processes (Bettman, 1979). When an individual faces a certain piece of information that attracts his or her attention while doing something else, he or she is interrupted and becomes informed about it, though he or she does not actively seek it out (Beales, Mazis, Salop, & Staelin, 1981). The impact of soft news on people's learning about foreign affairs (Baum, 2002, 2003) can be an example of the interruption effect, in that the piece of the political information *interrupts* while viewers are seeking entertainment. People can acquire information without being significantly involved in a learning situation. The less involved in the communication process, the less likely people are to resist persuasive messages from the media, and thus are more likely to learn about product information in the message without thinking too much about it (Krugman, 1965).

The effect of low involvement learning has been investigated in relation to the effects of television in political communication. Compared to newspapers, people are more likely to incidentally learn about public affairs by television. Patterson (1980) found that viewing party conventions and debates on TV contributed more to political knowledge gain for less interested individuals than for more interested. In their

experimental study, Neuman and colleagues (1992) found that television was a more powerful tool for people to learn about low salience issues, suggesting learning with low involvement.

The conceptualization and the mechanism of incidental learning make it possible to figure out conditions in which the learning process can occur. Frensch (1998) proposed two criteria for implicit learning, effortlessness and ubiquity, which also can be applied to incidental learning. The first criterion, effortlessness, is equivalent to the minimal information cost for individuals to learn about public affairs in Downsian term. The second condition is structural or environmental and is not prone to variance by individual audiences. In their experimental study of 90 college students, West and Stanovich (1991) found that differences in exposure to information, which relies on environmental factors, are a significant contributor to differences in knowledge, controlling for individual variance in cognitive ability. The findings suggest that incidental acquisition of information is dependent on environmental factors.

The Internet, a symbol of the new media environment, does provide the necessary conditions for incidental learning. Public affairs information is abundant and omnipresent on the Internet, meeting the criteria suggested by Frensch (1998)—effortlessness and ubiquity. Internet surfers cannot completely avoid coming across pieces of news at Web pages of the most popular Web sites, such as Google or Yahoo!, or during their other activities online, not to mention while visiting news media Web sites. When people use Google or Yahoo! to search for some information, the first page of search results frequently shows a line of "news results"—often at the first line. Another search engine backed by Microsoft, Bing, has a section of "popular now" presenting news most of times. Other popular portal Web sites such as Yahoo!, Microsoft Network (MSN), and AOL shows welcoming pages with a section of today's news at the front. Further, when

people sign out of their Web-based email services such as hotmail.com, they are led to the welcome pages of msn.com. These are today's examples that are equivalent to the newsreels of the 1950s illustrated by Downs (1957).

Given the ubiquitous political information in the media environment, individuals would be able to learn about public affairs without making significant efforts. Further, individual differences in political predisposition will not play important roles in the process of learning. Therefore, overall time spent on the Internet will be positively related to incidental exposure to political information online.

Hypothesis 3: Overall time spent online will positively predict incidental exposure to public affairs information.

Hypothesis 4: People's individual characteristics including political predisposition will not significantly predict incidental exposure to public affairs information.

EFFECTS OF INCIDENTAL LEARNING

Research has investigated effects of incidental exposure on public opinion across disciplines. Literature in marketing research has documented that incidental exposure can have effects on people's attitudes toward products or brand names. Janiszewski (1988) found that consumers' attitudes toward products in advertisements were formed in the absence of conscious processing of the information. After reading a student newspaper that had been manipulated for the study, subjects in a treatment group marked higher scores than those in a control group in an evaluation index consisting of five questions asking about their initial impressions. Incidental exposure also was found to facilitate the mere exposure effect. People evaluated brand names more favorably when they were

incidentally exposed to ads depicting those brands (Janiszewski, 1993). Bornstein and colleagues (1987) also found that subliminal exposure significantly affected subjects' attitudes toward photographs of actual persons as well as geometric figures.

Incidental exposure influences not only preference for stimuli but also subsequent judgments regarding the stimuli. After they were incidentally exposed to stimuli, people were more likely to choose the stimuli when asked to select based on preference rather than on recognition (Mandler, Nakamura, & Van Zandt, 1987). This finding indicates that incidental exposure effects also influence people's choices when alternative choice options are present. Shapiro and colleagues (1997) demonstrated that incidental exposure to advertisements had an impact on consumers' formation of consideration sets. A consideration set is a list of the brands or products that a consumer would consider purchasing (Roberts & Lattin, 1991; Shapiro et al., 1997; Wright & Barbour, 1977). In political communication, Baum (2002) found that consumption of soft news containing foreign policy information increased the likelihood of becoming more attentive to such news at later times. Though he did not directly measure effects of incidental exposure, the finding indicated that information inadvertently gained while one is seeking entertainment can influence later behavior. However, it also was documented that incidental exposure prior to active processing of the ad for the same brand reduced effects of the later ads (Pracejus, 1995). Repeated exposure does not always work effectively. Like all other media effects, incidental exposure also has conditions that moderate its impact. In the experiments with newspaper ads, Janiszweski (1988) found that subjects' preferences for products vary by placement and type of stimulus. Consumers' evaluations of brand names or logos were found to depend not only on the target stimulus itself but on stimuli surrounding the target (Janiszewski, 1990). Regarding stimulus type, visual

stimuli were found to be more effective in both incidental and intentional processing, while verbal ones were better only in intentional conditions (McQuarrie and Mick 2003).

It has been documented that incidental exposure to information contributes to people's awareness of the exposed pieces of information. In their extensive study on television's role in politics, Blumler and McQuail (1968) found that people with little or no interest in politics learned from television. Viewers who had not actively selected news were found to correctly identify more policies than indifferent non-viewers, which indicates evidence supporting effects of incidental exposure to television news (Blumler & McQuail, 1968). People in North New Jersey were more aware of candidates in a neighboring New York City election than were those in South New Jersey, though most New Jerseyans had no interest in the New York City elections (Zukin & Snyder, 1984). North New Jersey is in the same broadcasting market with New York City, so that people in the area happened to be exposed to New York election news, regardless of their interest in it. Individuals' self-reported likelihood of incidental exposure to news was positively associated with their current affairs knowledge (Tewksbury et al., 2001). In some cases, incidental exposure was more effective for recognition than for recall. Late-night TV viewing positively predicted recognition of current affairs but negatively predicted recall (Hollander, 2005).

The effects of incidental exposure also have been found in online settings. Yoo (2008) showed that Web ads contributed to the formation of more favorable attitudes toward brand names in the ads, regardless of the levels of attention paid. Further, people incidentally exposed to the Web ads were more likely to take the advertised brands into consideration when purchasing than those who were not exposed (Yoo, 2008). A study using online games found that incidental exposure to text advertising located above a gaming screen made a difference in preference for the advertised product (Acar, 2007).

Tewksbury and colleagues' (2001) study provides additional evidence of incidental exposure effect on the Internet.

Incidental exposure has effects on people's awareness of and attitudes toward objects carried by the exposed stimuli. It also influences subsequent judgments related to exposed information. Further, there is growing evidence of an incidental exposure effect in the new media environment. And in general, people's exposure to news media is positively associated with agenda-setting effects (Aigner, 1976; Lasorsa & Wanta, 1991; McClure and Patterson 1976, Shaw and Martin 1992; c.f. Erbring et al., 1980; Hill, 1985; Iyengar, 1979). The findings altogether lead to a prediction that incidental exposure to news online can facilitate the audiences' acquisition of a common agenda and awareness of information in the news.

Hypothesis 5: Online incidental exposure to public affairs information will positively predict the learning of the common agenda.

Hypothesis 6: Online incidental exposure to public affairs information will positively predict the recognition of the information.

Hypothesis 7: Online incidental exposure to public affairs information will positively predict the recall of the information.

In order to test these hypotheses, this dissertation employs several different methods ranging from an opinion survey to a laboratory experiment. The following chapter elaborates details of the approaches.

Chapter 3: Methods

This dissertation employs several different approaches to investigate the issues discussed above. As described, agenda setting and information cost are used as the main theoretical frameworks in testing the hypotheses.

Agenda-setting research has evolved from the identification of the basic relationship between media and the public to deeper insights into the process of agenda setting and the influence of individual characteristics. Research methods have been developed along this line. Dearing and Rogers (1996) described this trend as disaggregation. Since McCombs and Shaw (1972), the dominant research method in agenda setting has been cross-sectional hierarchy designs, which compare the priority of issue importance mentioned by the public with that identified in content analyses of the news. This method has been powerful in showing aggregate-level relationships between two key components, the media and the public, in agenda-setting studies. However, the method has limitations addressing questions that require individual-level analyses. Thus, a variety of methods have been developed to address different questions, and trends are in most cases towards use of disaggregated analyses (Dearing & Rogers, 1996). As researchers turn their attention to the process of agenda setting between the policy, the media and the public agendas, longitudinal or time-series designs have been used in various studies. The longitudinal designs were effective in determining direction of effects, and thus could address an important component of causality: time order (Brosius & Kepplinger, 1992; Funkhouser, 1973; McCombs & Zhu, 1995; Soroka, 2002).

Further, as research questions in agenda setting become increasingly interested in interactions between individuals and media, there has been increasingly more need for appropriate methods to take into account personal characteristics, such as motivation and

political predisposition. Aggregate-level analyses are often prone to criticism of an ecological fallacy (Robinson, 1950), in that they cannot explain effects of individual-level variables. Addressing this issue, individual-level research has been devised to bring individual characteristics into the analysis (Dearing & Rogers, 1996). Such research designs are grouped into two categories: experiments and surveys. Experimental studies usually manipulate the salience of certain issues and measure its effects (e.g. Iyengar & Kinder, 1987). The experiments are powerful enough to demonstrate a functional relationship between two variables, the most important component in causal arguments. Nevertheless, experimental studies can be criticized for their limitations in generalization, because of intrinsic limitations of laboratory settings. It is more challenging to take into account individual variables in survey-based agenda-setting studies, because it is usually prohibitive to use manipulation techniques in surveys. This is why most survey-based studies for individual-level analysis employed techniques "matching" media contents with respondents' answers to MIP questions. Exemplary are Erbring, Goldenberg, and Miller (1980), Lasorsa and Wanta (1990), and Wanta (1997). A basic criticism that the survey-based designs should address is how correctly the design can measure individual-level effects of agenda setting.

It is notable that the area of contextual effects has been largely ignored in research. Contextual effects refer to the impact of surrounding local environments on individuals. Geographical areas in which individuals live may account for variability of agenda-setting effects. Other contexts include income level and ethnicity. Recent development in statistical estimation may contribute to agenda-setting and communication research in general (e.g. Paek, Yoon, & Shah, 2005). This can be another move towards the disaggregation trend reviewed by Dearing and Rogers (1996).

Considering the advantages and disadvantages of various research methods, it is most important to select research designs that are appropriate for the specific research questions of any given study. More often than not, it is necessary to devise multi-method research designs to address complicated questions. In light of this, this dissertation designed several studies to address the research questions. A content analysis and a survey were conducted to use classic methods of matching the variance in media coverage and public opinion. Further, a laboratory experiment was performed to explore effects of incidental exposure on public opinion. The experiment was designed because of difficulty in measurement of the incidental exposure in surveys. In addition, this dissertation also used a secondary survey dataset of the 2004 National Annenberg Election Survey for a supplementary analysis.

Table 3.1: Summary of Primary Data Sets.

	Hypotheses tested	Study period
Content Analysis	H1, H2, H3	10/20 to 12/12/08
Survey	H2, H3, H4	12/15/08 to 1/8/09
Experiment	H5, H6, H7	11/17 to 11/26/08

MEASUREMENT

Two key variables in this dissertation are incidental exposure and the likelihood of acquiring a common agenda. Because three different approaches were employed in this dissertation, measures of the variables vary by methods to obtain data. However, the

different methodologies share rationales and problems related to measurement of the variables.

Likelihood of Acquiring a Common Agenda

It has always been challenging to measure individual variance in learning a common agenda. Agenda-setting studies have traditionally employed aggregate-level correlation methods to examine associations between the media and the public agenda. However, the aggregate-level method is not sufficient to examine individual differences in acquisition of a common agenda and the impact of incidental exposure on the difference. The individual-level measurement of agenda-setting effects has been a matter of concern for a long time. Because agenda setting is such that the variance of importance attached to issues covered by news media influences the priority of issue importance in the public's mind, individual-level effects mean reproduction of the media agenda to some degree in each individual's opinion. In the extreme, this kind of effect was defined as automaton and perfect reproduction of the media agenda in individuals' mind was claimed to be unrealistic (McCombs, 2004).

As such, many individual-level studies adopted experimental research designs and examined the effects with differences in issue salience between the treatment group and control group (e.g. Althaus & Tewksbury, 2002; Iyengar & Kinder, 1987). The classic study of Iyengar and Kinder (1987) manipulated the salience of several issues such as defense, inflation, pollution, arms control, civil rights, and unemployment and measured changes of problem importance that subjects reported between pre- and post-test. Althaus and Tewksbury (2002) adopted similar experimental designs to examine differences in agenda-setting effects between on- and offline media. Experimental studies usually manipulate relative importance of certain issues rather than a large set of issues to measure differences between control and treatment groups.

Because the experimental method is prohibitively difficult to adopt in survey research, scholars have developed a variety of inventive designs (Hill, 1985; Lasorsa & Wanta, 1990; Tsfati, 2003; Wanta, 1997). With a number of questions, Hill (1985) adopted a Likert-type scale to measure individual-level agenda-setting effects. Wanta (1997) also employed a Likert-type scale with multiple items. As Hill (1985) did, he introduced a way to address some respondents' tendencies to answer "all problems are important" or "none are important." To measure the magnitude of agenda-setting effects at an individual level, mediated issues and unmediated issues were determined from the results of a content analysis of the media agenda. Lasorsa and Wanta (1990) used the single MIP (most important problem) item to compute "medium agenda conformity" scores. Respondents' answers to the MIP question was compared to the agenda of each medium, and then the distance between each respondent's answer and the top issue in each medium's agenda was calculated and averaged across all media. Tsfati (2003) used the likelihood of respondents giving the "media answer" when asked the MIP question. The media answer is measured by content analysis. Methods used by Hill (1985) or Wanta (1997) have an advantage in dealing with multiple issues in examination of individuals' perceptions of issue importance. A disadvantage of this method is that the survey should include many questions asking the importance of each issue, which is inevitably resource-intensive. Conversely, measurements used in Lasorsa and Wanta (1990) or Tsfati (2003) are more useful when using data with limited questionnaires, such as secondary data sets.

This dissertation adopted a method used by Tsfati (2003) in its supplementary analysis of survey data in Chapter 5, because Tsfati's (2003) measure is more closely connected to the dichotomous nature of the research question—whether or not

individuals have a common agenda. In the experimental study, this study followed the design of Iyengar and Kinder (1987).

Incidental Exposure

Incidental learning has been investigated as another route to obtain political information and to learn about public affairs distinct from intentional processes (Downs, 1957; Krugman & Hartley, 1970; Tewksbury et al., 2001; Zukin & Snyder, 1984). However, measurement of incidental exposure is not an easy task, particularly in political communication research that is primarily based on survey methods. The challenge stems from the nature of incidental exposure. Incidental learning is a process where an individual gets to know public affairs information without seeking it out, and thus without paying cost for the political information (Downs, 1957). Because people learn about political information without paying a cost, i.e. without mobilizing their resources, in a process of incidental learning, they are not likely to correctly recall if and how much they are *incidentally* exposed to the information when asked in questionnaires. This works as the biggest challenge to measurement of incidental exposure, hampering research in survey-based research.

The fundamental difficulty in measurement leads most research on incidental exposure to experimental studies, which makes possible artificial manipulation of subjects' exposure to information. This is why marketing and psychology studies on incidental ad exposure have almost exclusively used laboratory experiments to control whether and how much people are incidentally exposed to product information (e.g. Eagle & Leiter, 1964; McGeorge & Burton, 1990; Reber, 1989; Shapiro, 1999; Shapiro, Macinnis, & Heckler, 1997; West & Stanovich, 1991). For instance, Eagle and Leiter (1964) conducted a laboratory experiment to study differences in recall and recognition between incidental and intentional processes. They divided subjects into three groups—

intentional, intentional with an orienting task, and incidental—using different task instructions. More recently, Shapiro and colleagues (1997) embedded advertising materials in the middle of articles in magazines to examine the effect of incidental exposure to the ad on subjects' recognition and consideration set. However, even laboratory experiments do not always produce findings of incidental exposure effects. In research on learning regularities found in the real world, some studies have failed to find evidence of incidental learning (Jones, 1990; Jones & Martin, 1992; Martin & Jones, 1997; Morton, 1967). An example is that people showed very poor performance in recalling letters on telephone keypads, despite an enormous amount of incidental exposure to them (Morton, 1967).

Despite the prevalence of laboratory experiments in incidental exposure research, some studies have investigated the process of incidental learning using survey methods (e.g. Tewksbury et al., 2001; Zukin & Snyder, 1984) and natural experimental conditions provided by the environment (e.g. Kelly, Burton, Kato, & Akamatsu, 2001; Zukin & Snyder, 1984). Zukin and Snyder (1984) attended to study the unique news media environment in New Jersey, in an analysis of public opinion surveys examining the effects of incidental exposure to campaign information. People in North New Jersey were inadvertently exposed to news about the New York City mayoral election, because they were living in the New York market of television broadcasting. There was no such exposure in South New Jersey. This media environment provided the natural conditions for a field experiment on how incidental exposure to a neighboring city's election news affects public opinion. North New Jerseyans without interest in, thus without motivation to actively seek out information about, the New York City election were found 40 percent more likely to know candidates than South New Jerseyans. This difference in the probability of being informed about candidates in a neighboring city's elections was

found in surveys in 1977 and 1981, lending support to a theory of learning through incidental exposure (Zukin & Snyder, 1984). Another study based used differences in exposure to culture-specific regularities. Kelly and colleagues (2001) recruited experiment subjects from two internationally and culturally different universities, one university in the U.K. and the other in Japan. They tested subjects' recognition accuracy of culture-specific regularities, such as the face side of a coin, and measured subjects' confidence of their answers to the question. The results indicated that British and Japanese subjects displayed significantly higher levels of knowledge of regularities found in their culture (Kelly et al., 2001). The natural experimental condition is powerful in examining effects of incidental exposure.

To examine the impact of the incidental exposure to online information on people's current events knowledge, Tewksbury and colleagues (2001) used secondary data sets originally collected by the Pew Research Center. The study proposed two ways of measuring incidental exposure: direct and indirect. The direct way is to use self-reported answers to a question of "are you ever exposed to news online, when you have purposes other than to get the news?" This very straightforward question adopted a dichotomous measure, but still cannot circumvent the fundamental limitation of the measurement described above. Acknowledging the problem, they proposed an indirect method that can account for the likelihood of incidental exposure with measures of respondents' time online and their time online spent seeking news. The likelihood of incidental exposure may increase as the difference increases between the two amounts of the times. This study provided mixed results about effects of incidental exposure on people's current events knowledge. Some surveys found positive associations between incidental exposure measured by the above methods and knowledge, while others did not

(Tewksbury et al., 2001). The findings again showed the difficulty in measurement of incidental exposure in surveys.

In addition to laboratory experiments, environmental conditions, which naturally provide control and treatment groups, work as very effective tools to investigate the incidental learning process (Kelly et al., 2001; Zukin & Snyder, 1984). However, it is not always possible to find such environmental conditions. Studies on incidental learning have mainly used three different methods to investigate predictors and effects of incidental exposure. Table 3.2 illustrates select studies by the methods used.

Table 3.2: Studies on Incidental Exposure.

Lab Experiment	Field Experiment	Survey
Eagle & Leiter, 1964; McGeorge & Burton, 1990; Reber, 1989; Shapiro,1999; Shapiro, Macinnis, & Heckler, 1997; West & Stanovich, 1991	Kelly et al., 2001; Zukin & Snyder, 1984	Tewksbury et al., 2001

As seen in Table 3.2, studies have predominantly employed experimental methods to investigate the incidental exposure learning process. This is because an isolation of incidental exposure in survey settings is almost impossible. Surveys using self-reported measures of incidental exposure do not always generate consistent results (e.g. Tewksbury et al., 2001). This dissertation adopted both the methods of the survey and the laboratory experiment to investigate predictors and effects of incidental exposure. Due to the isolation problem of incidental exposure, it is expected that this study will produce mixed results in regards to effects of incidental exposure on people's acquisition of a

common agenda: experiment-based analysis may generate significant findings whereas survey-based analysis may yield null findings.

Controls

Investigations of the research questions in this dissertation warrant appropriate controls of other related variables. Some examples are basic demographics, political variables such as overall level of political knowledge, and habitual media use. The control variables vary by method accepted; therefore, controls and other measurement details are explained in the proper sections of later chapters.

Chapter 4: Experiences to Share

The endurance of agenda setting plays a central role in debates on fragmentation in the new media environment. Chapter 2 provided extensive discussion about the theoretical relationship between agenda setting and the fragmentation hypothesis. Despite the environmental changes discussed, the news media are likely to have continuing agenda-setting power to provide the public with a common agenda, because it is based on the volume of news, not on valence. This chapter evaluates the homogeneity or heterogeneity of the media agenda and its association with the public agenda through aggregate-level analyses. First, this chapter examines the stability of the news agenda covered by different media outlets, using a data set collected by a content analysis. Next, this chapter investigates how the media agenda is associated with the public agenda, matching content analysis data with survey results. The evaluation tests whether society has experiences to share in general.

> Hypothesis 1: The media agenda will be stable and homogeneous across media outlets.
>
> Hypothesis 2: The media agenda will be positively associated with the public agenda.

METHODOLOGY

Data

To determine the media agenda, a content analysis was performed for three newspapers—*The New York Times, The Washington Post,* and the *Los Angeles Times*—and evening newscasts of three television networks—ABC World News with Charles

Gibson, CBS Evening News with Katie Couric, and NBC Nightly News with Brian Williams. Homogeneity of the media agenda across mainstream media outlets has been well documented (Reese & Danielian, 1989; Whitney & Becker, 1982). Further, studies also have reported high correlations between online news agendas and mainstream media agendas (Lee, 2007; Lim, 2006; Roberts et al., 2002). Hence, the media agenda inferred from the samples can represent the overall media agenda on and offline.

For a sample of stories to code, this study used stories on front pages for newspapers and stories in evening newscasts for television networks. Using the Lexis/Nexis database service, two human coders drew all stories from the front pages of three newspapers and from the main evening newscasts of the three networks. Coders performed keyword searches using the Lexis/Nexis database. Keywords used to draw front page stories of three newspapers are "section A and pg. 1," "pg. A01" and "part A and pg. 1" for *The New York Times*, *The Washington Post* and the *Los Angeles Times*, respectively. Keywords for television newscasts were "world news," "evening news" and "nightly news" for ABC, CBS and NBC, respectively.

Because literature has revealed that the optimal time lag for the agenda-setting effect is four to six weeks (Winter & Eyal, 1981; Zucker, 1978), sample stories were drawn in an eight-week period from October 20 to December 12 in 2008. This period was selected because the survey data collection began December 15, 2008. To avoid effects of trivial items such as news briefs, only stories longer than 100 words were used in further analysis. The sampling procedure generated 1,159 stories in total. The number of sample stories varied by news outlet, because each medium has adopted a different editorial policy. Some outlets include more stories on their front pages or evening newscasts. Relatively more sample stories were drawn from television broadcasts than from newspaper front pages. The number of stories drawn from the newspapers is 232, 222,

and 228 for *The New York Times*, *The Washington Post* and *Los Angeles Times*, respectively. The number for network newscasts is 274, 320, and 341 for ABC, CBS and NBC, respectively.

For further analysis matching the media agenda with the public agenda, two coders content analyzed sample stories and classified them into one of 12 issue categories, following the master code of the "most important problem" item in a survey of the American National Election Studies. Issue categories are social welfare, agriculture, natural resources, labor, racial problems, technology, public order, economy and business, foreign affairs, national defense, functioning of government, and non-political.[1] The unit of analysis was each story. Each of the coders made judgments and assigned each story to an issue category independently.

For the intercoder reliability test, two hundred stories, about 17 percent, were randomly selected for the reliability test. Two coders agreed on 185 stories in coding the issue of each story and disagreed on 15 stories, yielding a .91 reliability coefficient. This reliability is acceptable by most standards of content analysis (Riffe, Lacy, & Fico, 1998).

Measurement

The design of this dissertation allowed for a content analysis and a survey to test hypotheses 1 through 4. This study evaluates the problem of possible fragmentation in the

[1] For example, the 2004 ANES codes respondents' answers to the question into 12 different categories. Issues related to the general public welfare, such as education, fall into "Social welfare." "Agriculture" is about issues related to farm economy and subsidies. "Natural resources" includes issues of environment protection and development. "Labor" deals with issues related to labor and union-management problems. "Racial problems" includes issues related to race. "Technology" deals with issues specific to science and technology. "Public order" is about order in society such as crimes, abortion and homosexuality. "Economy and Business" includes issues specific to economic problems such as financial crises and international trade. "Foreign affairs" deals with issues about international relations. The War in Iraq falls into this category. "National defense" is about issues of defense in general, such as the defense budget and nuclear war. "Functioning of government" includes issues related to the appropriateness of government works. Candidates' campaigns are an example of this category. "Non-political" deals with all other things unrelated to political or public affairs. Entertainment and sports fall into this category.

new media environment by investigating antecedents of incidental exposure and its effects on acquisition of a common agenda at individual levels. Accordingly, studies in this dissertation are designed to make possible analyses at individual levels. Nevertheless, hypothesis 1 and 2 are basically replications of previous findings in agenda setting research at aggregate levels, and are first tested against the content analysis and the survey data sets.

Evaluating homogeneity of the media agenda and its association with the public agenda, this dissertation employs traditional methodologies used by extant agenda-setting studies. Since McCombs and Shaw (1972), rank-order correlation analysis and matching the media and the public agenda have been widely accepted and used for aggregate level analyses in agenda-setting research. The method combining content analysis and a pubic opinion survey is highly regarded as innovative in mass communication research (Rogers, Dearing, & Bregman, 1993). Along this line, this dissertation conducted a comprehensive content analysis of three newspapers and three television networks in the U.S., along with a public opinion survey with a national sample. In evaluating homogeneity of the media agenda, correlation analyses were run against the content analysis data set. For an investigation of association between the media and the public agenda, the survey results[2] were matched with the content analysis data.

The Media Agenda

Frequencies of coverage by the six news media were recorded for each of 12 issue categories, to give ranks to the issues. The list of issues ranked by the frequency is the agenda of each media outlet. For further analysis, aggregated agenda variables of newspapers, television, and media in general also were constructed, using the same

[2] The total number of observations in the CJCR survey is 1,482. However, 484 did not complete the questionnaire enough to answer the question of most important problem, which reduced total sample size to 998 in further analysis.

procedure. In total, nine variables were constructed for the media agenda: NYT, WP, LAT, ABC, CBS, NBC, newspaper, television, and media. The coding scheme for issues in news stories followed the 2004 ANES master code of the "Most Important Problem." The ANES used the master code in analysis of open-ended questions to identify the most important problem.

The Public Agenda

For the variable of the public agenda, this dissertation used a public opinion survey conducted by the Center for Journalism and Communication Research in the University of Texas School of Journalism (CJCR). The CJCR survey included a number of items including the question of the nation's most important problem. The open-ended question asked respondents to name issues of importance: "What are the most important issues facing our country?" Two human coders analyzed respondents' answers to the question. Coders used the ANES master code of most important problem to match the public agenda with the media agenda variables generated in the content analysis. Coders recorded answers to three variables of "first mention," "second mention," and "third mention." When respondents named only one answer, coders recorded only "first mention." When there was more than one issue, the first answer was recorded as "first mention" and the next ones as "second" and "third." Answers after the third mention were not recorded. For instance, when a respondent wrote an answer of "economy, terror, Medicare, Iraq War" to the open-ended question, economy was coded as first mention, public order[3] as second mention, and social welfare[4] as third mention. Iraq War was ignored.

[3] According to ANES master code of most important problem, terrorism was coded as public order.
[4] Medicare was coded as social welfare.

For the intercoder reliability test, two coders selected a sample of observations and coded them as a check against each other's coding results. Out of a total of 998 observations, 150 cases (15%) were randomly selected for the reliability test. Two coders agreed on 149 cases in coding the first mention of the respondents' answers and disagreed on one case, yielding a .99 reliability coefficient. For the second mention, the two coders agreed on 146 cases and disagreed on four, generating a .96 reliability coefficient. For the third mention, coders agreed on 145 and disagreed on five, yielding a .93 reliability coefficient.[5] The variable of first mention was used as the public agenda in correlation analysis to test association between the media and the public agendas.

RESULTS

The Media Agenda

Table 4.1 illustrates what issues each news outlet talked about and reveals several patterns of media coverage during the period from late October to mid December in 2008. During the period including the 2008 presidential campaign, the news media most frequently dealt with the economy and business and the functioning of the government.

[5] Three different statistics were calculated for this intercoder reliability test. All three coefficients, Scott's pi, Cohen's Kappa and Krippendorff's alpha were same .99, .96, and .93 for first, second, and third mention, respectively.

Table 4.1: The Media Agenda by News Outlet: Frequencies (and Ranks).

	Aggregated Media	NP	TV	NYT	WP	LAT	ABC	CBS	NBC
Economy & Business	497 (1)	204 (1)	293 (1)	67 (1)	75 (1)	62 (1)	84 (1)	113 (1)	96 (2)
Functioning of Gov't	419 (2)	146 (2)	273 (2)	58 (2)	55 (2)	33 (3)	83 (2)	91 (2)	99 (1)
Public Order	178 (3)	99 (3)	79 (5)	24 (4)	32 (3)	43 (2)	24 (5)	38 (3)	17 (6)
Non-political	159 (4)	61 (5)	98 (3)	18 (6)	16 (5)	27 (5)	30 (3)	28 (4)	40 (3)
Foreign Affairs	155 (5)	90 (4)	65 (6)	33 (3)	28 (4)	29 (4)	19 (6)	15 (6)	31 (5)
Social Welfare	130 (6)	46 (6)	84 (4)	18 (5)	11 (6)	17 (6)	26 (4)	26 (5)	32 (4)
Natural Resources	25 (7.5)	12 (7.5)	13 (8)	4 (7)	1 (8.5)	7 (7)	3 (7.5)	1 (10)	9 (8)
National Defense	25 (7.5)	7 (9)	18 (7)	2 (10)	1 (8.5)	4 (9)	3 (7.5)	3 (7.5)	12 (7)
Racial Issues	18 (9)	12 (7.5)	6 (9)	4 (8)	3 (7)	5 (8)	2 (9)	2 (9)	2 (9.5)
Technology	8 (10)	4 (10)	4 (10)	4 (9)	0	0	0	3 (7.5)	1 (11)
Labor	3 (11)	1 (11)	2 (11)	0	0	1 (10)	0	0	2 (9.5)
Agriculture	0	0	0	0	0	0	0	0	0
Total	1617	682	935	232	222	228	274	320	341

When aggregated, the number of economic issues was 497 and that of the functioning of the government was 419, out of a total of 1,617 sample news stories. Aggregated newspapers covered the economy 204 times and the functioning of the

government 146 times, out of a total of 682 sample newspaper stories. Aggregated evening television newscasts covered the economy 293 times and the functioning of the government 273 times, out of a total of 935 sample evening newscasts. Individual media outlets showed the exact same pattern. The only exception was NBC News, which covered the functioning of the government 99 times and the economy 96 times. However the difference between the two is negligible.

The proportion of these two issues over the entire mainstream media sample was 57 percent. The prevalence of the two issues is not surprising, when considering social contexts during the period of analysis. The meltdown of the financial market followed by the mortgage crisis in the fall of 2008 obviously led to much coverage of economic stories. Also, the ANES master code of the most important problem includes issues of elections and campaigns in the category of the functioning of the government. Because the sampling period overlapped with the presidential campaign period, news media were very likely to deal with issues in this category. Further, the top six issues dominated the media agenda, while the bottom six issues were only scarcely spotted. Other dominant issues were public order ($N = 178$), non-political ($N = 159$), foreign affairs ($N = 155$), and social welfare ($N = 130$). The six top issues, including economy and the functioning of the government, mark 95 percent of the total sample.

The Public Agenda

People's perception of issue importance in late 2008 and early 2009 is illustrated as a rank-ordered list of issues in Table 4.2. Though the first mention is used as a variable representing the pubic agenda in further analysis, it is worthwhile to glance at the distribution of all three mentions of the most important issues in the country. It is helpful to understand the shape of public opinion.

First of all, the number of missing answers sheds light on the dominance of a couple of issues in people's minds. When coding answers of the open-ended question, unanswered or nonsense cases were dropped as missing. The numbers of missing cases were 49, 420, and 728, for first, second, and third mention, respectively. After the first mention, about a third did not name any other issue, and further, most of respondents did not think about the third issue.

Most individuals do not think about more than two issues as nationally important issues. A vast majority of respondents thought economy and business was the single most important issue the nation faced. Out of a total of 949 respondents, 712 (75%) named this issue as their answer to the open-ended question. Following economy and business are social welfare (N = 81, 8.5%), public order (N = 62, 6.5%), foreign affairs (N = 47, 5.0%), and the functioning of the government (N = 29, 3.1%). The predominance of economy & business in people's minds is not surprising, because of a dramatic financial meltdown, which started in September 2008. The financial crisis was enough to cause more than half of Americans (56%) to follow news about the economy very closely (Pew Center, 2008). While the issue of economy and business dominates, many other issues have very few mentions. Technology, labor, and agriculture had no single respondent in the survey. Racial and non-political issues were mentioned only once and national defense twice. Overall, out of a total of 12 issue categories, six issues were not mentioned by more than 10 respondents. The results were consistent with the idea that the public agenda mostly consists of five to seven issues at any given time (McCombs & Zhu, 1995; Shaw & McCombs, 1977).

When naming a second issue to the MIP question, the highest number of people answered social welfare (N = 156, 27.0%, out of 578 total responses), followed by foreign affairs (N = 133, 23.0%), economy & business (N = 116, 20.1%), and public

order (84, 14.5%). In the second mention, economy & business again emerged as one of the major issues in people's minds. Combined with the first mention, almost all respondents (N = 828, 87.2%) thought the economy was the most important problem. The distribution of issues was quite skewed, with no mention of labor, agriculture, or non-political. National defense, racial issue, and technology were mentioned by fewer than four respondents. Once again, six issues were named in more than 10 cases. In the third mention, social welfare emerged as the most frequently-mentioned issue, named by 75 (27.8%) out of 270 respondents. Following social welfare were foreign affairs (55, 20.4%), public order (53, 19.6%), and economy & business (30, 11/1%). Even in the third mention, the issue of economy & business played a major role.

Table 4.2: The Most Important Issue Mentioned in Opinion Survey: Frequencies (and Ranks).

	First mention	Second mention	Third mention
Economy & Business	712 (1)	116 (3)	30 (4)
Social Welfare	81 (2)	156 (1)	75 (1)
Public Order	62 (3)	84 (4)	53 (3)
Foreign Affairs	47 (4)	133 (2)	55 (2)
Functioning of Gov't	29 (5)	33 (6)	22 (5)
Natural Resources	14 (6)	50 (5)	21 (6)
National Defense	2 (7)	3 (7)	6 (7.5)
Racial Issues	1 (8.5)	2 (8)	6 (7.5)
Non-political	1 (8.5)	0	1 (9.5)
Technology	0	1 (9)	1 (9.5)
Labor	0	0	0
Agriculture	0	0	0
Missing	49	420	728
Total	998	998	998

Homogeneity of the Media Agenda

Hypothesis 1 predicted that the media agenda will be stable and homogeneous across media outlets. To test hypothesis 1, this dissertation conducted a content analysis of front page stories of three newspapers and the main evening newscasts of three television networks. And as just described, most news outlets in this study covered the issues of the economy and the functioning of the government most extensively. To check homogeneity of the agenda among the news media, this study used rank-order correlation analyses, following the traditional approach of agenda-setting research (McCombs & Shaw, 1993; Roberts et al., 2002). Based on the literature (McCombs & Shaw, 1993), an agenda was defined as a list of issues ordered by frequency of news media coverage.

Table 4.3 details findings of the correlation analyses testing hypothesis 1. As expected in the hypothesis, the agendas of individual news outlets are highly associated with each other. All of the correlation coefficients were positive and statistically significant.

The correlations illustrate very strong relationships between agendas of news media coverage. The mean correlation is +.93 for the 15 individual comparisons. It was also found that agendas of individual newspapers are slightly more highly correlated with another newspaper's agenda than they are with other television newscast agendas. The mean value of correlations between individual newspaper agendas and the aggregated newspaper agenda is + .98. The mean correlation between individual television agendas and the aggregated newspapers agenda is +.93. The same trend also was found for television news agendas. The mean value of correlations between individual television agendas and the aggregated television agenda is + .99. The mean correlation between individual newspaper agendas and the aggregated TV agenda is +.92. Though there is a slight difference in the media agenda between newspapers and TV newscasts, it is

negligible. The aggregated newspaper agenda is highly correlated with the aggregated TV agenda (Spearman's rho = +.94). Overall, the evidence suggests that the media agenda is homogeneous across these news outlets in the period from October to December of 2008.

Table 4.3: Rank-Order Correlations of the Media Agenda.

	NYT	WP	LAT	ABC	CBS	NBC	NP
WP	.98**						
LAT	.89**	.93**					
ABC	.96**	.95**	.84**				
CBS	.96**	.97**	.87**	.99**			
NBC	.96**	.92**	.80**	.99**	.96**		
NP	.98**	1.0**	.96**	.94**	.95**	.91**	
TV	.97**	.95**	.84**	1.0**	.99*	.99**	.94**
N	12	12	12	12	12	12	12

** $p < 0.01$ (1-tailed)
N = number of issue categories in content analysis

The Media and the Public Agenda

Hypothesis 2 predicted that the media agenda would be positively associated with the public agenda at an aggregate level. To test the hypothesized relationship, this dissertation again used a rank-order correlation analysis following extant agenda-setting research.

Table 4.4 summarizes Spearman's rho correlation coefficients generated in bivariate analyses comparing the media and the public agenda. These nine separate comparisons of the media agendas with public agenda show distinct patterns similar to those found in previous agenda-setting studies. First, all of the coefficients are positive

and statistically significant. Aside from aggregated variables of newspapers, television, and the aggregated media in general, six comparisons between the public agenda and individual media agendas show strong associations with the public agenda. Out of six coefficients, four are equal to or greater than +.80. The mean value of the six coefficients is +.80.

Table 4.4: Rank-Order Correlations of the Media Agenda and the Public Agenda.

	NYT	WP	LAT	ABC	CBS	NBC	NP	TV	Media
Public	.80**	.83**	.86**	.81**	.75**	.75**	.84**	.80**	.82**
N	12	12	12	12	12	12	12	12	12

** $p < .01$ (1-tailed); *N* = number of issue categories in content analysis

Results also indicated that the public agenda is slightly more highly associated with the agendas of newspapers than it is with television newscast agendas. The mean value of correlations between the public agenda and individual newspaper agendas was +.83. The mean correlation between the public agenda and individual television agendas is +.77. Comparisons of the public agenda with aggregated newspapers and television agendas also illustrate a difference in the magnitude of coefficients. The correlation coefficient between the public agenda and aggregate newspaper agenda was found to be +.84, while that of the public agenda and aggregate television agenda was +.80. However, the difference was minimal. The pubic agenda is highly correlated with the aggregated media agenda (Spearman's rho = +.82). In short, the findings suggest that the media agenda is positively associated with the public agenda captured in late 2008 and early 2009.

CONCLUSION

The results of this chapter provide a starting ground for further arguments in this dissertation. As discussed above, homogeneity of the media agenda and the positive association between the public and the media agenda play central roles in testing assumptions of the fragmentation hypothesis throughout this study. Chapter 4 illustrates that a variety of media outlets present coverage of news stories with homogeneous agendas to the audience. Compared to several decades ago, the number of news media outlets has enormously increased to almost infinite, which makes possible the argument for the heterogeneous media agenda.

Despite this possibility, the evidence found in this chapter lends support to a homogeneous agenda. The explosive increase in the number of media channels and in the amount of media content has yet to fragment the agenda, at least among these mainstream news organizations. Further, this chapter shows that the homogeneous media agenda has positive associations with the public agenda in the period between December of 2008 and early January of 2009. In the new media environment, audiences are provided with many means to actively participate in the communication process along with abundant media channels and content. This has enhanced the possibility of selective exposure to an unprecedented level. The findings in this chapter indicate that the effects of selective exposure have not influenced the association between the media and the public agenda at an aggregate level. In sum, the media still provide experiences to share, and people learn about these experiences.

Table 4.5: The Most Important Issues Mentioned by Different Groups by Incidental Exposure Online.

	Group 1	Group 2	Group 3	Group 4
Economy & Business	681 (1)	31 (1)	450 (1)	262 (1)
Social Welfare	76 (2)	5 (2)	47 (2)	34 (2)
Public Order	57 (3)	5 (2)	33 (3)	29 (3)
Foreign Affairs	46 (4)	1 (5)	32 (4)	15 (4)
Functioning of Government	24 (5)	5 (2)	20 (5)	9 (5)
Natural Resources	14 (6)	0	11 (6)	3 (6)
National Defense	1 (7)	1 (5)	0	2 (7)
Racial Issues	1 (7)	0	1 (7)	0
Non-political	1 (7)	0	0	1 (8)
Technology	0	0	0	0
Labor	0	0	0	0
Agriculture	0	0	0	0
Missing	44	5	31	18
Total	945	53	625	373

Note: Group 1 reported at least some incidental news exposure online whereas Group 2 reported no incidental exposure. Group 3 reported frequencies of incidental news exposure above average of the survey sample, and Group 4 reported frequencies below the average.

This dissertation also argues that effects of incidental exposure to public affairs information contribute to the positive association between the media and the public

agenda, evidenced by the aggregate-level analysis. A supplementary analysis on the association between the media and the pubic agenda provides interesting pictures about the relationship between incidental exposure and agenda setting. Table 4.5 summarizes agendas of sub-samples grouped by their reported amount of incidental news exposure online. Though the agendas are very similar to each other, individual associations with the media agenda are slightly different from each other. Table 4.6 illustrates correlations between the each group's agenda and the media agenda.

Table 4.6: Rank-Order Correlations of the Media Agenda and the Agendas of Different Groups by Incidental Exposure.

	Group 1	Group 2	Group 3	Group 4
Media	.83**	.79**	.82**	.71**
N	12	12	12	12

** $p < 0.01$ (1-tailed)
N = number of issue categories in content analysis
Note: Group 1 reported at least some incidental news exposure online whereas Group 2 reported no incidental exposure. Group 3 reported frequencies of incidental news exposure above average of the survey sample, and Group 4 reported frequencies below the average.

The first comparison is between Group 1 and Group 2. The agenda of Group 1, reporting at least some incidental exposure online, was more strongly correlated with the media agenda than that of Group 2, reporting no incidental exposure. The second comparison is between Group 3 and Group 4. The agenda of Group 3, reporting above-average incidental news exposure online, was more strongly associated with the media agenda than that of Group 4, reporting below-average exposure. The results of analysis suggest a link between incidental exposure and acquisition of a common agenda.

For further investigation of the relationship, we should be able to find structural factors predicting the incidental exposure in the new media environment. This study now

turns to explore what factors predict incidental exposure. The next chapter addresses this question.

Chapter 5: Incidental Exposure in the New Media Environment

Without exposure to a common agenda carried by the media, people are less likely to learn about it. It is obvious that exposure to news is the first necessary condition to meet before audiences are able to learn what social problems to think about. As discussed in Chapter 2, there is an alternative route of learning other than intended or intentional learning: incidental learning. While the new media environment has a variety of factors encouraging audience specialization (e.g. Prior, 2005, 2007; Tewksbury, 2005), it is also probable that there are environmental forces facilitating incidental exposure to political information. In Chapter 4, results of the data analysis indicated that the new media environment still has a homogeneous media agenda and positive associations between the media and the public agenda. The findings suggest that there are structural factors encouraging the incidental learning of a common agenda in new media. This chapter tests the two hypotheses posited in Chapter 2 about predictors of incidental exposure to public affairs information on the Internet.

> Hypothesis 3: Overall time spent online will positively predict incidental exposure to public affairs information.
>
> Hypothesis 4: People's individual characteristics including political predisposition will not significantly predict incidental exposure to public affairs information.

METHODOLOGY

Data

As a way to measure public opinion both at the aggregate and individual levels, this dissertation used data collected by an online survey.[6] Internet-based surveys have both advantages and disadvantages. One benefit is that online surveys usually have quicker responses than offline surveys. This is possible because the Internet has significantly eased the distribution of survey questionnaires. Online surveys also might produce a better quality of responses. Literature has suggested that interactive features of online surveys may increase respondents' engagement in the survey processes (Kiesler & Sproull, 1986). This may lead to the enhancement of response quality (Gunter, Nicholas, Huntington, & Williams, 2002). Therefore, respondents are likely to provide richer answers to open-ended questions, to complete more items, to talk more about themselves, and to make fewer mistakes (Brown, Culkin, & Fletcher, 2001).

Online survey methods also have drawbacks. One of the most serious problems concerns representativeness. Web-based surveys are inevitably limited to people who have access to the Internet, a limit threatening the generalizability of studies. Web-based surveys also are geographically restricted to places where infrastructure for an Internet connection is in place. The individual and geographical limitations severely threaten the validity of Web-based surveys in that samples cannot represent the entire population. In sum, Web-based surveys may not achieve generalizability because 1) not all the citizens have Internet access and 2) it becomes difficult to acquire a sample in which every individual has an equal chance to be selected (Smith, 1997; Stanton, 1998; Thompson, Surface, Martin, & Sanders, 2003).

---

[6] This survey was conducted as a collaborative project of the Center for Journalism and Communication Research (CJCR) in The University of Texas School of Journalism, directed by Dr. Homero Gil de Zuniga. I thank CJCR and Dr. Gil de Zuniga for granting use of the dataset in this dissertation.

The strengths and weaknesses of Web-based methodologies illustrate their differences from traditional methods. However, if a study based on the online method has validity and reliability, results of the study should not be significantly different from those of a study based on traditional methods. Research methods aim at estimation of a population as precisely as possible. If the methods warrant appropriate representation of the population, the studies should generate compatible findings as long as they have exactly the same research questions. If not, it would raise a question of reliability in the Web-based study.

In public opinion research, efforts have been made to integrate advantages of the Internet into traditional survey methods. More recent efforts show viability within this kind of methodology when matching the drawn sample to key demographic variables of the national census (Berrens, Bohara, Jenkins-Smith, Silva, & Weimer, 2003; Best & Krueger, 2002). Knowledge Networks and Polimetrix are good examples found in commercial opinion survey businesses. Knowledge Networks combine benefits of traditional and online methods, by conducting online surveys for known survey panels called KnowledgePanel. Participants in the panel are chosen by methods based on probability sampling to represent the population. Polimetrix also uses online surveys, employing statistical techniques of adjustments to match samples with the entire population.

The CJCR survey, which this dissertation used, followed this matching strategy to warrant representativeness of a sample.[7] The data is based on an online panel provided by the Media Research Lab at The University of Texas at Austin. Typically, study participants are first randomly selected from the pool of the panel, unless researchers

[7] The representativeness of data using the weighting methods is still a matter of debate. The CJCR survey is not free from the question, because it uses the matching strategy. Therefore, it should be noted that the sample of this survey is not completely random and its representativeness should be taken with caution.

request a different method. For this study, the selected panel members then received the survey URL through an email invitation. This invitation included details of survey procedures, including a time estimate to complete a survey. Participants also were informed that they were taking part in a drawing to obtain a monetary incentive.[8] The Media Research Lab based this particular sample on two U.S. census variables, gender (male 50.2% female 49.8%) and age (18-34 30%, 35-54 39%, 55+ 31%), and attempted to match a sample to these characteristics. A first invitation was sent December 15, 2008, and three reminders were submitted in the following three weeks to improve response rates. A concluding reminder was sent January 5, 2009. A total number of 1,482 final cases yielded a 17.3 percent response rate. Survey questions and options used in analyses are provided in Appendix A.

Measurement

This dissertation posits two hypotheses to understand the predictors of incidental learning in the online media environment. For the evaluation of the hypotheses, key variables in this analysis include incidental exposure, overall frequency of going online (Internet use), and variables measuring political predisposition. Three variables were used to measure individuals' political predisposition: party identification, ideology for social issues, and ideology for economic issues. Measures of control variables also are presented.

Incidental Exposure

In this chapter, incidental exposure is the only dependent variable, because the research is interested in how environmental and individual factors influence incidental exposure to online political information. As discussed in Chapter 3, incidental exposure is notorious

[8] Surveys based on the Media Research Lab online panel use two different incentives: monthly and survey-specific. For more details about the online panel, see (Choi & Lee, 2007; Daugherty, Lee, Gangadharbatla, Kim, & Outhavong, 2005; Kahlor, 2007).

for its difficulty when measured by survey methods. The hardship stems from the nature of incidental exposure and from the self-reporting formats of survey questionnaires. Despite the limitations, a survey-based measurement is useful and sometimes inevitable, in particular when a study's goal is exploring multiple predictors of incidental exposure (e.g. Tewksbury et al., 2001). That is the case for this chapter. Tewksbury and colleagues (2001) used a question item from a series of the Pew Research Center for the People and the Press surveys for their investigation of the relationship between incidental exposure and people's knowledge and predictors of incidental exposure. Following this research, this dissertation used a similar question: "When you're on the Internet, how often do you encounter news when you were going online for a different purpose?" However, the CJCR survey used a 7-point Likert scale to measure respondents' incidental exposure to news online, whereas the Pew Research Center employed a simple dichotomous response in its surveys. This variable was coded such that higher values show more frequent incidental exposure to news online. Response options included every day (51.7%), 5 to 6 days per week (10.9%), 3 to 4 days per week (11.7%), 1 to 2 days per week (10.2%), once every few weeks (5.3%), less often (4.8%), and never (5.3%).

Internet Use

An individual's overall Internet use was measured by respondents' reports of their frequency of going online: "How often do you go online?" The CJCR survey used the same 7-point scale as with the incidental exposure measure. This variable was coded such that higher values indicate more frequently visiting the Internet. Eighty six percent answered every day; 8.1 percent, 5 to 6 days per week; 1.6 percent, 3 to 4 days per week; 0.4 percent, 1 to 2 days per week; 0.1 percent, once every few weeks; 0 percent, less often; and 0.3 percent, never.

Party Identification

The measure of political party identification used a single item: "Generally speaking, do you think of yourself as REPUBLICAN, DEMOCRAT, or INDEPENDENT?" This survey used an 11-point scale coded such that higher values show stronger affiliation to the Democratic Party. The mean response for party identification was 0.57 (*SD* = 0.26, *Range* = 0 to 1.0)

Ideology

To measure an individual's ideology, two separate questions were used. One is for social issues and the other for economic issues. Survey respondents were asked to indicate their ideological leanings on an 11-point scale: "Where would you place YOURSELF on a scale of 0 to 10, where 0 is strong conservative and 10 is strong liberal?" The variables were coded such that higher values show a more liberal ideology. The mean response for ideology for social issues was 0.55 (*SD* = 0.27, *Range* = 0 to 1.0), and the mean for ideology for economic issues 0.51 (*SD* = 0.26, *Range* = 0 to 1.0).

Internet Activities

Though it is not hypothesized, it is important to explore which Internet activities have influence on incidental exposure. This chapter investigates specific Internet activities, using 12 items from the survey. The measures used the same question wording: "How often do you use the Internet for the following, where 1 is never and 10 is all the time?" The activities include: (1) get information for work or school (*M* = 6.4, *SD* = 3.54, *Range* = 1 to 10), (2) use a search engine (*M* = 8.8, *SD* = 1.87, *Range* = 1 to 10), (3) find difficult information (*M* = 8.2, *SD* = 2.19, *Range* = 1 to 10), (4) subscribe to RSS feeds for news (*M* = 2.7, *SD* = 2.77, *Range* = 1 to 10), (5) use twitter to get my news (*M* = 1.7, *SD* = 1.9, *Range* = 1 to 10), (6) Get entertainment/sports information (*M* = 5.7, *SD* = 1.2,

Range = 1 to 10), (7) E-mail (*M* = 9.6, *SD* = 1.2, *Range* = 1 to 10), (8) Instant messaging (*M* = 4.4, *SD* = 3.56, *Range* = 1 to 10), (9) Video chatting (*M* = 2.2, *SD* = 2.45, *Range* = 1 to 10), (10) Making phone calls (*M* = 2.1, *SD* = 2.5, *Range* = 1 to 10), (11) Social networking (*M* = 3.7, *SD* = 3.34, *Range* = 1 to 10), and (12) Do banking or get financial information (*M* = 7.3, *SD* = 3.09, *Range* = 1 to 10).

Controls

Control variables in this chapter include demographics and news media use. Out of 998 observations[9], 67 percent of respondents were female, and 81 percent identified as white. The average age of the respondents was 45.7 (*SD* = 12.4, *Range* = 18 to 84). Respondents' response options for highest level of education include: less than high school (0.6%), high school or GED (14.8%), some college (28.1%), 2-year college degree (10.7%), 4-year college degree (26.5%), master's or professional degree (16.3%), and doctoral degree (3%). The average household income level of the respondents was $65,000 a year.

For habitual use of news media, respondents were asked to report their frequency of using specific news outlets. For example, regarding network TV news, the question was: "On your television, how often do you watch network TV news (such as ABC, NBC, and CBS) to get information about current events, public issues, or politics?" Response options included every day, 5 to 6 days per week, 3 to 4 days per week, 1 to 2 days per week, once every few weeks, less often, and never. The response options were the same for all media use items, except print magazines. Options for print magazine were weekly, 2-3 times a month, once a month, less than once a month, and never. The average frequencies of news media use were 3.9 (*SD* = 2.0, *Range* = 0 to 6) for network

[9] Out of 1,482 respondents of the survey, 998 answered the most important problem item. Therefore, subsequent analyses are based on 998 observations.

TV news, 3.5 (*SD* = 2.1, *Range* = 0 to 6) for cable TV news, 4.1 (*SD* = 1.9, *Range* = 0 to 6) for local TV news, 3.0 (*SD* = 2.1, *Range* = 0 to 6) for radio news, 3.2 (*SD* = 2.0, *Range* = 0 to 6) for print newspapers, 2.9 (*SD* = 2.1, *Range* = 0 to 6) for online newspapers, 1.4 (*SD* = 1.4, *Range* = 0 to 4) for print magazines, and 1.1 (*SD* = 1.5, *Range* = 0 to 6) for online magazines.

Political knowledge also was controlled in the analyses in this chapter. To measure respondents' levels of political knowledge, a scale was constructed using four questions. The first two questions were multiple-choice and the second two were open-ended: (1) Who is the British Prime Minister? (2) Who is the Speaker of the U.S. House of Representatives? (3) Who is the Vice President-elect of the United States? (4) Sarah Palin is the governor of which state? Correct answers were coded as a 1 and incorrect answers (including don't know and refused) were coded as a 0. In a confirmatory factor analysis, all items of political knowledge measures were loaded on one factor. The results of the four measures were averaged to generate a measure of political knowledge (*M* = 0.76, *SD* = 0.24, *Range* 0 to 1, *n* = 998).

RESULTS

To investigate effects of Internet use and political predisposition on incidental exposure, a bivariate analysis was first conducted to see relationships between key variables. This analysis illustrates whether people who go online more frequently are more likely to be exposed incidentally to public affairs information, and whether people's political leanings influence the probability of incidental exposure. Table 5.1 demonstrates relationships between incidental exposure, Internet use, party identification, and ideology for social and economic issues.

Table 5.1: Zero-Order Correlations of Incidental Exposure with Independent Variables: Pearson's Correlation Coefficient.

	Internet use	Party identification	Ideology for social issues	Ideology for economic issues
Incidental exposure to news	.19**	.02	.09**	.06†
N	998	866	885	929

†$p < 0.1$, **$p < 0.01$ (2-tailed)
Note: Sample size was reduced for some analyses due to missing cases.

As expected, Internet use, measured by overall frequency of going online, has a significant correlation with incidental exposure to news online ($r = 0.19$, $p < 0.01$). People who go online more frequently are more likely to be exposed incidentally to public affairs information. This finding indicates that political information is ubiquitous on the Internet and the environmental factor facilitates individuals' effortless information gain through incidental exposure. Variables measuring individual differences of political predisposition have in general very weak correlations with incidental exposure. Correlation coefficients are not significantly different from zero for party identification ($r = 0.02$ $p > 0.1$) or marginally different for ideology on economic issues ($r = 0.19$, $p = 0.07$). Ideology on economic issues was found to have a significant correlation with incidental exposure to political information ($r = 0.09$, $p < 0.01$). Nevertheless, the coefficient was still very weak in magnitude. The findings suggested that individual differences in political predisposition are not important factors of incidental exposure in the new media environment. However, a more rigorous test of the relationships is necessary because the bivariate analysis does not allow controlling for other important factors.

Table 5.2: Regression of Incidental Exposure: Unstandardized Coefficient (SE).

Internet use	.48 (.12)**
Political Predisposition	
Party identification	-.62 (.36)†
Ideology, social	.55 (.37)
Ideology, economic	.20 (.41)
Controls	
Age	.00 (.01)
Female	.02 (.14)
Education	.01 (.05)
White	-.19 (.19)
Income	.04 (.02)*
Network TV news	.01 (.05)
Cable TV news	.10 (.03)**
Local TV news	.02 (.05)
Radio news	-.02 (.03)
Print newspaper	.01 (.04)
Online newspaper	.23 (.04)**
Print magazine	.06 (.06)
Online magazine	-.02 (.06)
Political knowledge	.13 (.29)
Constant	.25 (.83)
R-square	0.16

Note: Dependent variable is self-reported probability of incidental news exposure on the Internet at 7-point scale. Sample size was reduced due to missing cases.
n=779; †$p < 0.1$, *$p < 0.05$, **$p < 0.01$

For a more conservative test of the relationships between incidental exposure and other key variables, a regression analysis was performed. In this analysis, the dependent variable was probability of incidental exposure to news on the Internet. The four independent variables of interest were: Internet use, party identification, ideology for social issues, and ideology for economic issues. The hypothesized relationships are that

people with a habit of going online more frequently are more likely to have more incidental exposure to news online, and that people's ideological leaning or party affiliation does not predict individuals' probability of being incidentally exposed to public affairs information online. A series of variables were included as controls. They consist of demographics (age, gender, education, race, income), news media use (network TV news, cable TV news, local TV news, radio news, print newspapers, online newspapers, print magazines, online magazine)s, and political knowledge.

The results illustrated in Table 5.2 provide important evidence supporting the hypotheses that people's incidental exposure to news online is influenced by an environmental factor, but not by individual differences in political predisposition. As predicted in H3, overall frequency going online is found to significantly predict incidental exposure to public affairs information online, controlling for demographics, media use, and political knowledge (β = .14, t = 3.96, p < .01). For every 1 unit increase in the measurement scale for Internet use, incidental exposure to political information grows about 50 percent. Individuals who habitually go online are more likely to be incidentally exposed to public affairs information on the Internet.

Variables measuring political predisposition have very weak or non-significant relationships with incidental exposure. Neither ideology for social or economic issues was found to significantly predict incidental exposure to news online, controlling for other variables. People's ideology does not play an important role in predicting incidental exposure. Note that the significant bivariate relationship of ideology for social issues vanished in the multivariate analysis. Political identification was found to negatively predict incidental exposure to public affairs information online (β = -.08, t = -1.75 p = .08). People closer to the Democratic Party are less likely to be exposed incidentally to public affairs information online. However, the relationship was only marginally

significant. Overall findings indicated that effects of political predisposition on incidental exposure on the Internet are only minimal.

Some control variables are found to significantly predict incidental exposure on the Internet. Individuals' household income was found to have a significant relationship with incidental exposure (β = .08, t = 2.0 p < .05). For every 1 unit increase in the measurement scale for income, incidental exposure to political information increases about 4 percent. No other demographic variables were found to be a significant predictor. Among media use variables, cable TV news viewing was found to significantly predict incidental exposure (β = .12, t = 3.1 p < .01). For every 1 unit increase in the measurement scale for cable TV news viewing, incidental exposure to political information increases about 10 percent. Online newspapers also were found to be a significant predictor (β = .25, t = 6.44 p < .01). For every 1 unit increase in the measurement scale of online newspaper reading, incidental exposure to political information grew about 23 percent. The remaining media use variables were found to have no significant relationship with incidental exposure. Neither did political knowledge.

It is obvious from the results that overall frequency of going online is one of the strongest predictors of incidental exposure on the Internet. Given the findings, further analysis was conducted to explore specific online activities that might have an impact on incidental exposure. As described above, the CJCR survey includes 12 items to measure individuals' specific Internet activities. Table 5.3 provided bivariate relationships that incidental exposure to news online has with these 12 specific activities.

All of the activities except using twitter to get news were found to have a positive and significant correlation with incidental exposure to political information online. For instance, incidental exposure was found to have a significant correlation with finding

difficult information ($r = 0.33$, $p < 0.01$) and using a search engine ($r = 0.31$, $p < 0.01$). It is notable that the correlation was significant for getting entertainment/sports information ($r = 0.25$, $p < 0.01$) and social networking ($r = 0.12$, $p < 0.01$). It is not surprising that many different Internet activities have a positive and significant correlation with incidental exposure, because overall frequency of going online has a significant relationship to incidental exposure to political information on the Internet.

Table 5.3: Zero-Order Correlations between Incidental Exposure and Specific Internet Activities: Pearson's Correlation Coefficient.

	Incidental exposure to news
Get information for work/school	.22**
Use a search engine	.31**
Find difficult information	.33**
Subscribe to RSS feeds for news	.13**
Use Twitter to get my news	.04
Get entertainment/sports information	.25**
E-mail	.14**
Instant messaging	.13**
Video chatting	.09**
Making phone calls	.08*
Social networking	.12**
Do banking or get financial information	.19**
N	991

*$p < 0.05$, **$p < 0.01$ (2-tailed)
Note: Sample size was reduced due to missing cases.

As a more rigorous investigation, this study turns to a regression analysis to control for other individual differences. The dependent variable in the regression analysis is again incidental exposure online measured by respondents' self-reported probability of being incidentally exposed to news on the Internet. The independent variables are the 12

online activities. A series of control variables were included in the regression analysis: political predisposition, demographics, media use, and political knowledge.

Table 5.4 provides a much different picture from that of the correlation analysis above. Most of the significant relationships found in the correlation analysis vanished, controlling for demographics and other variables.

Table 5.4: Regression of Incidental Exposure on Internet Activities: Unstandardized Coefficient (SE).[10]

Political Predisposition	
Party identification	-.66 (.35)†
Ideology, social	.21 (.36)
Ideology, economic	.58 (.40)
Internet Activities	
Get information for work/school	-.00 (.02)
Use a search engine	.10 (.02)*
Find difficult information	.17 (.04)**
Subscribe to RSS feeds for news	.04 (.03)
Use Twitter to get my news	-.07 (.05)
Get entertainment/sports information	.05 (.02)**
E-mail	.05 (.06)
Instant messaging	.00 (.02)
Video chatting	-.02 (.04)
Making phone calls	.01 (.03)
Social networking	.01 (.02)
Do banking or get financial information	.02 (.02)
Constant	1.16 (.65)†
R-square	0.22

Note: Dependent variable is self-reported probability of incidental news exposure on the Internet at 7-point scale. Sample size was reduced due to missing cases.
n=779; †$p < 0.1$, *$p \leq 0.05$, **$p < 0.01$

[10] Demographic variables, media use variables, and political knowledge were also included to analysis for control but omitted from the table.

Internet activities that survive the effects of controls are finding difficult information (β = .21, t = 4.02, p < .01), using a search engine (β = .10, t = 1.97, p = .05), and getting entertainment/sports information (β = .14, t = 3.61, p < .01). For every 1 unit increase in the measurement scale of finding difficult information, using a search engine, and getting entertainment/sports information, incidental exposure to political information grows about 17, 10, and 8 percent, respectively. It is again notable that the effects of activities for entertainment/sports were found significant, after taking into account all controlling variables. As in previous regression analysis, cable TV viewing (β = .08, t = 2.39, p < .05) and online newspaper reading (β = .19, t = 5.4, p < .01) were found to have significant effects on incidental exposure. Among other control variables, income (β = .06, t = 1.66, p = .01) and party identification (β = -.09, t = -1.8, p = .07) were found to have marginal effects on incidental exposure to public affairs information on the Internet.

CONCLUSION

This chapter sheds some light on understanding incidental exposure to public affairs information in the new media environment. The Internet has risen to a status of a central and comprehensive component in the current media system. Chapter 5 documents that the overall frequency of going online contributes to incidental exposure to political information on the Internet. Individual differences in political predisposition were found to have a less than significant effect on people's incidental exposure online. The findings suggest that online incidental exposure meets the criteria proposed as conditions of incidental learning: ubiquity and effortlessness. News abounds in every corner of the Internet. If people spend more time online, it is inevitable that they are more likely to be exposed to the information. They do not actively, and thus selectively, seek out the news. Findings also suggest that political predisposition does not play an important role in the process of incidental exposure.

In addition, this chapter explored specific Internet activities that might have impact on incidental exposure to public affairs information online. Among the activities serving as predictors of incidental exposure, "getting entertainment/sports information" deserves much attention. It is obvious that people involved in this activity do not actively seek out pubic affairs information. This evidence might serve as an online version of a classic example of incidental exposure that Downs (1957) described as "the newsreel in a motion picture theater." In short, the Internet provides people with environmental opportunities to learn about public affairs without paying a significant information cost.

Given the evidence of environmental factors affecting incidental exposure, the next question this dissertation address is whether the incidental exposure contributes to people's learning about a common agenda and whether it positively affects learning about public affairs. The following chapter will evaluate hypotheses about this question.

Chapter 6: Effects of Incidental Exposure on Public Opinion

For democracy to function properly, citizens should be able to reach a consensus on which social problems are important. This dissertation first provides theoretical explanations for certain assumptions about how this occurs, such as the existence of a common agenda carried by the media and inexpensive, cheap ways in which people acquire the common agenda. Previous chapters have documented empirical evidence that many of these conditions are met in the new media environment. The media agenda is homogeneous across news outlets and it is positively associated with the public agenda at aggregate levels. The Internet, a central component in the current media system, provides people with opportunities to gain public affairs information without paying a significant cost. The main thesis of this dissertation argues that the public can learn about a common agenda without paying much cost, thanks to incidental news exposure, which works as a limiting force against fragmentation. Given findings from previous chapters, the thesis requires a final set of evidence showing that incidental exposure does contribute to people's learning of a common agenda and awareness of the information to which they were exposed.

As discussed above, people will learn about what are important problems in society from the media. They learn today's social agenda by being exposed to news via either intentional or incidental routes. Hence, incidental exposure will contribute to the learning of a common agenda. Further, the more exposure to public affairs information, the better informed audiences will be. People are more likely to recognize and recall information in the news when they are incidentally exposed to it more often. Based on this rationale, this chapter evaluates the effects of incidental exposure to information on

learning a common agenda and on the recall and recognition of facts covered by the news.

Hypothesis 5: Online incidental exposure to public affairs information will positively predict the learning of the common agenda.

Hypothesis 6: Online incidental exposure to public affairs information will positively predict the recognition of the information.

Hypothesis 7: Online incidental exposure to public affairs information will positively predict the recall of the information.

METHODOLOGY

Data

Because incidental exposure as a variable is not easily examined using survey methodologies, communication researchers have generally given little consideration to directly investigating effects of incidental exposure on public opinion. This dissertation addresses the issue by employing an experimental approach, which permits causal inference.

This study used a Web site to manipulate participants' incidental exposure to public affairs information. Each subject was told to navigate the Web site, constructed almost the same as The University of Texas College of Communication home page for the purpose of study. A professional Web designer was hired to build the Web site. Two different sets of Web sites were constructed: one with incidental exposure items and the other without them. These contexts simulate people's everyday experiences on the Internet and make it possible to measure the differences that incidental exposure makes. To limit subjects' navigation within the Web sites, the computers' Internet connections

were unplugged. Therefore, all activities during the experiment were restricted to the Web sites. In this study, 194 undergraduate students were recruited from communication courses at a large Southwestern university. Students were asked to visit a laboratory and participate in one session of an experiment. Class credit was provided as an incentive to participants. The experiment was conducted for 10 days from Nov. 17 to 26, 2008.

To measure the effects of incidental exposure, the study used a one-way design with three treatment groups and a control group. Subjects in all three treatment groups were exposed to Web pages with stimuli of incidental exposure items, whereas those in the control group were exposed to Web pages without the stimuli. Subjects were randomly assigned to one of the four groups. Slightly more than a quarter ($N = 54$) were assigned to the control group and exposed to the constructed College of Communication Web site without incidental exposure items. The remaining subjects ($N = 140$) were assigned to treatment groups and were exposed to the Web site with incidental exposure items. Between three and 10 subjects participated in each session. The three treatment groups differed from each other by the instructions given to subjects. After 30 minutes of exposure, participants completed a questionnaire asking them to give an opinion about the informational effectiveness of the Web sites; they also were asked other questions, including ones designed to measure their perception of issue importance.

This study used environment news stories and banner ads leading to the stories as manipulations of incidental exposure to public affairs information. The news stories were about (1) air pollution affecting genes of unborn babies, (2) the possibility that old Alaskan oil wells could sink into the ocean, (3) scientific evidence for unequivocal global warming, and (4) a massive oil spill in the Gulf of Mexico. All of the stories were real stories, except the oil spill in Gulf of Mexico, which manipulated time and space components of other oil spill accidents in the Atlantic Ocean off the coast of Spain. For

the other three stories, all items remained exactly the same as originally published. Dates of the stories were changed to make the experimental subjects perceive the news up-to-date. The air pollution story was adopted from the Web site of *USA Today*; the Alaskan oil wells story from *The San Diego Union-Tribune*; and the global warming story from *The New York Times*. The Spain oil spill story was taken from the Web site of CBS News and manipulated to change time and space elements to make fake stories about the Gulf of Mexico oil spill. Snapshots of Web sites used as stimulus in the experiment are presented in Appendix B.

All subjects, including the control group, were given the following instructions saying that they were going to participate in an experiment evaluating Web sites:

> The purpose of this study is to understand the pattern of Web information use by young adults. As a part of this research, your task is to evaluate the usefulness of college information on the College of Communication Web site. The information on the Web site is up-to-date. You are expected to evaluate the usefulness of this information and the basic operation of the Web site

The first treatment group — *no-instruction group* (N = 44) — was given no additional instructions. After reading the instructions above, they were told to start navigating the College of Communication Web site. The treatment aims to see the pattern of people's incidental exposure to news in a condition without any other restriction. Compared to the other two treatment groups, the condition for this group is the closest to the real-world situation because no further artificial instruction was given. The second treatment group — *cursor-locating group* (N = 44) — was told to move their mouse cursor to a banner ad leading to one of four environment news stories, whenever the new

Web page was open. Subjects in this group were instructed to keep the cursor on the banner ad and to stay there for 10 seconds before they evaluate the Web page. However, the participants were explicitly instructed not to click on the banner ads, the instruction which assures that they do not read the body of each news story. This treatment was designed to investigate whether viewing only short headlines of news has effects on people's perception of issue importance and awareness of news events. The third treatment group — *clicking group* ($N = 52$) — was told to click on the banner ad and read the news story for at least 10 seconds, whenever they opened a new Web page. This experimental condition was designed to see whether reading at least a part of news stories leads to changes in perceived issue importance and news events awareness in participants' mind. It was expected that participants in this group perceived this clicking and reading task as a part of evaluation of usefulness of College of Communication Web sites, due to repeatedly being given the main instruction during each experiment session. Table 6.1 summarizes the experiment design.

Subjects' responses were collected by questionnaires after a 30-minute session of navigating the Web sites. Subjects completed a questionnaire about the relative importance they assigned to issues, evaluation of the College of Communication Web site, general media use, political variables, and demographics. A complete questionnaire used in the experiment is presented in Appendix C.

Table 6.1: Experiment Design.

	Control	Incidental exposures		
		No-instruction	Cursor-locating	Clicking
Manipulation	No stimulus	4 banner ads leading to environment news stories	4 banner ads leading to environment news stories	4 banner ads leading to environment news stories
Instruction	Common instruction describing a task to evaluate effectiveness of Web sites relating college information	Common instruction only	Common instruction and one describing additional task to move cursor to banner ads and stay there for 10 seconds	Common instruction and one describing additional task to click on banner ads and read stories for 10 seconds
Unobtrusive measures	Program run to record activities	Program run to record activities	Program run to record activities	Program run to record activities

Measurement

This chapter employs both an experiment and survey data to evaluate the hypotheses. As discussed in Chapter 3, incidental exposure has been a challenge to researchers because of measurement difficulties. Stemming from the definition of incidental exposure, the self-report questions widely used in surveys have been criticized as not reliable. Due to this obstacle, survey-based research has rarely been fruitful in detecting effects of incidental exposure on public opinion. This is why most effects studies across disciplines adopt experimental designs to investigate the impact of incidental exposure. In this sense, this chapter primarily uses an experimental study for hypothesis testing, while using the CJCR survey for supplementary analyses.

The experiment used a post-test questionnaire to measure participants' opinions and to collect biographical information. Complete question wordings and response options are provided in Appendix C.

Dependent Variables

The evaluation of the hypotheses in this chapter warrants three dependent variables. For hypothesis 5, individuals' perceptions of issue importance is used as the dependent variable. In the first experimental investigation of agenda-setting effects, Iyengar and Kinder (1987) conducted a series of laboratory experiments. This dissertation followed that study in measuring the dependent variable. Iyengar and Kinder (1987) asked participants to judge the importance of national problems with questions about their personal concern for the issues and their opinion about government action on each issue. This dissertation used nearly the same questions to construct a scale measuring individuals' perceptions of issue importance: (1) "Shown below is a list of issues that have faced society in recent years. How important do you think each is?" (2) "How much do you care about each?" (3) "How much do you think people in government should worry about each?" (4) "Compared with how you feel about other public issues, how strong are your feelings on these issues?" The questions were asked for five issues: environment, war on terror, economy, health care, and foreign affairs.

Environment news stories were used as stimuli in this experiment, and thus the environment issue was hypothesized to show a difference between a control group and the three treatment groups. The variables were coded such that higher values show that participants perceive the issue as more important. A series of confirmatory factor analyses showed that the four answers of participants to the questions were loaded on one factor. The answers of participants to these four questions were averaged to build a scale, generating five scales for five issues. The mean response in the scale is 0.80 (*Cronbach's alpha* = 0.88, *SD* = 0.21, *Range* = 0.13 to 1.0) for the environment issue, 0.72 (*Cronbach's alpha* = 0.85, *SD* = 0.22, *Range* = 0 to 1.0) for war on terror, 0.85 (*Cronbach's alpha* = 0.70, *SD* = 0.13, *Range* = 0.44 to 1.0) for economy, 0.72

(*Cronbach's alpha* = 0.83, *SD* = 0.22, *Range* = 0.06 to 1.0) for health care, and 0.72 (*Cronbach's alpha* = 0.78, *SD* = 0.19, *Range* = 0.13 to 1.0) for foreign affairs. Subjects were found to perceive the economy as the most important issue. The results were consistent with findings in the CJCR public opinion survey, where economy was the most frequently mentioned as an important issue facing the country.

Whether incidental exposure to news online contributes to the public's awareness of news events can be evaluated by investigating whether individuals can recognize and recall specific pieces of information conveyed in the stimuli. In an experimental study on agenda-setting effects under online settings, Althaus and Tewksbury (2002) measured participants' recognition and recall of news events. They used a battery of questions, adapted from the National Election Studies 1989 pilot study. Following Althaus and Tewksbury (2002), this dissertation asked four questions about information covered in the environment news story embedded as stimuli in the College of Communication Web sites. Each question began with the phrase "Have you seen or heard recently any news stories about," followed by a short explanation of a news event. Response options were a yes/no dichotomous answer. A "yes" is coded as a 1 and "no" as a 0. To measure recognition, a scale was constructed by averaging codes of answers to the four dichotomous questions. In a confirmatory factor analysis, the four items were loaded on one factor. The mean response in the scale is 0.52 (*Cronbach's alpha* = 0.79, *SD* = 0.38, *Range* = 0 to 1).

If a participant answered "yes" to the question, he or she was then asked to provide a brief description of the news event. Two human coders content analyzed subjects' answers to the open-ended question. When coders found the description was correct, compared to the news article, the response was coded as a 1, meaning that he or she recalled the news event. Incorrect mentions (including don't know and refused) were

coded as a 0. For intercoder reliability in the content analysis, about 10 percent of the entire cases were coded by both of the two coders. The mean values of intercoder reliability coefficients were 0.92, 0.93, and 0.93 for Scott's Pi, Cohen's Kappa, and Krippendorff's Alpha, respectively.[11] The results of reliability tests were acceptable (Riffe et al., 1998). Recall was measured by a scale, constructed by averaging the four recall items. A confirmatory factor analysis found that the four items were loaded on one factor. The mean response in the scale is 0.20 (*Cronbach's alpha* = 0.85, *SD* = 0.33, *Range* = 0 to 1).

Independent Variables

In this experiment, the independent variables are different levels of incidental exposure. As explained above, the experimental design has three treatment conditions: no-instruction, cursor-locating, and clicking. A control group was provided the same Web sites without stimuli. This dissertation defines incidental learning as information gain without intention to do so. All participants were first instructed that their task was to evaluate the effectiveness of the Web sites in terms of college information, which harnesses subjects' intention to the task. Therefore, instructions used in the two treatment groups that followed do not undermine the conditions of incidental exposure. Those three treatment conditions worked as independent variables representing different levels of incidental exposure.

The experiment used two other independent variables: time spent on news and frequency of visiting news sites. Though the experimental design allowed a manipulation of incidental exposure, it is still of interest to measure subjects' patterns of exposure to

[11] The reliability coefficients were all 1.0 for three questions measuring recall of news stories about Alaskan oil wells, air pollution effect on baby genes, and academic consensus on global warming. For oil tank crash news, the coefficients were 0.69 (Scott's Pi), 0.70 (Cohen's Kappa), and 0.70 (Krippendorff's Alpha).

news stories. However, self-report formats have been criticized for their weakness in reliability. To tackle this problem, this dissertation used unobtrusive measures, which do not rely on subjects' self-reports. The two variables were measured by analysis of log files generated by an activity-tracking computer program, SC-KeyLog. The program installed on laboratory computers records all of subjects' activities on the computer, without giving a sign to computer users that the recording is occurring. The log files include information about addresses of Web pages visited, time spent on the pages, frequency of visiting, and so forth.

This chapter used time spent on news stories and frequency of visiting news sites for the following analysis. For each of the four news story Web pages, the program yielded total amount of time that a subject spent on it in seconds, generating a variable, for instance "time on Alaska news." A confirmatory factor analysis found that all four items were loaded on one factor. A scale was constructed by summing up the amount of time recorded for the four news Web pages. The mean amount of time spent on news stories is 370.8 seconds (*Cronbach's alpha* = 0.83, *SD* = 477.8, *Range* = 0 to 1,568). The program also generated total frequency of visiting news Web sites. All four items were loaded on one factor in a confirmatory factor analysis. A scale of overall frequency was built by summing all four measures. The mean frequency of visiting news sites is 5.9 (*Cronbach's alpha* = 0.86, *SD* = 8.35, *Range* = 0 to 36).

Controls

The analysis of the experimental data includes demographics, political variables and news media use as control variables. Out of the total 194 cases, 67 percent of subjects were female, and 54 percent identified themselves as white.

Political variables are political knowledge, political interest, party identification, and ideology. A scale was constructed using eight questions to measure the subjects'

level of political knowledge. The questions were: (1) What job or political office does Dick Cheney NOW hold? (2) What job or political office does Nancy Pelosi NOW hold? (3) What job or political office does John G. Roberts Jr. NOW hold? (4) What job or political office does Ben Bernanke NOW hold? (5) Who has the final responsibility to decide if a law is constitutional or not? (6) Whose responsibility is it to nominate judges to the federal courts? (7) Which party has the most members in the House of Representatives in Washington? (8) Which party has the most members in the Senate in Washington? The first four questions required short answers and the remaining questions were multiple-choice. Correct answers were coded as a 1 and incorrect answers (including don't know and refused) were coded as a 0. The results of the four measures were averaged to generate a scale of political knowledge (*Cronbach's alpha* = 0.73, *M* = 0.49, *SD* = 0.26, *Range* 0 to 1, *n* = 194).

Political interest was measured by a single item: How much are you interested in current events, public issues, or politics? The variable was coded such that higher values show stronger interest in a 5-point scale (*M* = 0.63, *SD* = 0.25, *Range* 0 to 1, *n* = 193). For party identification, this study also used a single item: "Generally speaking, do you usually think of yourself as a REPUBLICAN, a DEMOCRAT, an INDEPENDENT, or what?" This survey used a 7-point scale. This variable was coded such that higher values show stronger affiliation to the Republican Party (*M* = 2.46, *SD* = 1.94, *Range* = 0 to 6). The measure of an individual's ideology employed a single question: "Where would you place YOURSELF on the following scale, or haven't you thought much about this?" The variables were coded such that higher values show more conservative ideology on a 7-point scale (*M* = 2.56, *SD* = 1.55, *Range* = 0 to 5).

For measures of news media use, subjects were asked to report their frequency of reading, watching, or viewing news in specific media outlets. The question was, for

instance, “How often do you read newspapers to get information about current events, public issues, or politics?” for the newspaper category. Response options were every day, 5 to 6 days per week, 3 to 4 days per week, 1 to 2 days per week, once every few weeks, less often, and never. The response options are the same for all five media outlets. The average frequencies of news media use were 2.9 (*SD* = 1.4, *Range* = 0 to 6) for TV news, 2.8 (*SD* = 1.7, *Range* = 0 to 6) for newspapers, 4.5 (*SD* = 1.6, *Range* = 0 to 6) for online news, 1.8 (*SD* = 1.2, *Range* = 0 to 6) for magazines, and 1.5 (*SD* = 1.5, *Range* = 0 to 6) for radio.

RESULTS

Learning of a Common Agenda

This study first performs analyses of data collected by the experiment, and then proceeds to a supplementary analysis of survey data to evaluate incidental news exposure effects on common agenda acquisition. A bivariate analysis was first conducted to see basic relationships between key variables and then analysis of variance and multivariate analysis followed.

Table 6.2 provides a summary of zero-order correlations between perceived issue importance and incidental exposure variables. The exposure variables include both manipulated and unobtrusive measures. The variables made by manipulation were coded as dichotomous such that 1 indicates belonging to the treatment conditions. Incidental news exposure items, both manipulative and unobtrusive, were found to have significant correlations only with subjects’ perceptions of importance about environmental issues. All 20 correlation coefficients between incidental news exposure items and perceived importance of the war on terror, economy, health care, and foreign affairs were very weak and statistically not significant. The findings are far from surprising because there

was no exposure to such issues during the experiment session. Out of five measures of incidental exposure, three have positive and significant associations with the perceived importance of the environment issue.

Table 6.2: Zero-Order Correlations between Perceived Issue Importance and Incidental Exposure.

	Environment	War on terror	Economy	Health care	Foreign affairs
Manipulation					
No-instruction	-0.11	0.01	-0.02	0.07	-0.09
Cursor-locating	-0.15*	0.09	0.02	-0.09	-0.02
Clicking	0.32**	-0.03	0.01	0.01	0.01
Unobtrusive measure					
Time spent	0.31**	-0.01	-0.03	-0.04	-0.04
Frequency of visiting	0.29**	0.02	-0.08	-0.06	-0.06
N	194	194	194	194	194

* $p < 0.05$, ** $p < 0.01$ (2-tailed)

It was found that subjects in the clicking group were more likely to perceive that the environment was an important problem facing society ($r = 0.32$, $p < 0.01$). Unobtrusive measures of incidental exposure also were found to have positive and significant relationships with perceived importance of the environment issue. The more time subjects spent on news story Web pages, the more likely they were to report that the environment was important as social a problem ($r = 0.31$, $p < 0.01$). Further, subjects who visited news story Web pages more often were more likely to report high scores in perception of the environment issue importance ($r = 0.29$, $p < 0.01$). The findings are consistent with hypothesis 5 that incidental news exposure online contributes to people's

learning of a common agenda. As expected, the correlation between no-instruction and perceived importance of the environment issue were not significantly different from zero (r = -0.11, $p > 0.05$). However, the cursor-locating item was found to have a significant but negative relationship with perceived importance of the environment issue (r = -0.15, $p < 0.05$). The mixed results of correlation analysis warrant more rigorous tests of the hypotheses.

Analysis of variance was performed to investigate whether the manipulation of incidental exposure influenced subjects' perception of issue importance. The subjects' reported scores of perceived issue importance were analyzed with a one-way ANOVA. Table 6.3 shows the means, standard deviations and sample sizes. Table 6.4 presents the complete ANOVA source table.

Table 6.3: Mean Perception of Issue Importance (SD).

Perceived Issue Importance	Group			
	Control	No-instruction	Cursor-locating	Clicking
Environment	.78 (.21)	.76 (.22)	.74 (.21)	**.91 (.13)**
War on Terror	.70 (.24)	.73 (.21)	.76 (.19)	.71 (.22)
Economy	.86 (.12)	.86 (.15)	.86 (.15)	.86 (.14)
Health Care	.75 (.20)	.75 (.24)	.68 (.20)	.69 (.23)
Foreign Affairs	.75 (.18)	.69 (.20)	.71 (.21)	.72 (.18)
N	54	44	44	52

Note. Cell entries are the mean scores of perceived issue importance obtained from four post-test questions.

The analysis of variance yielded a significant effect of treatment conditions on subjects' perceived importance of the environment issue, $F(3, 190) = 7.28$, $p < 0.01$. Results indicated that manipulation of incidental news exposure online made a significant difference between the four groups in perception of issue importance. As expected, the analysis of variance found no significant difference between groups in perception of issue importance for the other four issues of war on terror, $F(3, 190) = 0.57$, $p = 0.64$, economy, $F(3, 190) = 0.04$, $p = 1.0$, health care, $F(3, 190) = 1.27$, $p = 0.29$, and foreign affairs, $F(3, 190) = 0.84$, $p = 0.47$.

Table 6.4: Source Table for ANOVA for Perception of Issue Importance by Incidental Exposure.

Source		SS	df	MS	F	p
Environment	Between groups	0.84	3	0.28	7.28	0.00
	Within groups	7.31	190	0.04		
	Total	8.15	193			
War on terror	Between groups	0.08	3	0.03	0.57	0.64
	Within groups	8.86	190	0.05		
	Total	8.94	193			
Economy	Between groups	0.00	3	0.00	0.04	0.99
	Within groups	3.62	190	0.02		
	Total	3.62	193			
Health care	Between groups	0.18	3	0.06	1.27	0.29
	Within groups	8.88	190	0.05		
	Total	9.06	193			
Foreign affairs	Between groups	0.09	3	0.03	0.84	0.47
	Within groups	7.00	190	0.04		
	Total	7.08	193			

Subsequent post hoc tests for the environment issue revealed a significant difference between the clicking group and the control group conditions ($p < 0.01$). However, there was no significant difference between the cursor-locating group and the control conditions ($p = 0.80$) and between the no-instruction group and control conditions ($p = 0.96$).[12] Rather, the tests found significant difference between the clicking and cursor-locating conditions and between the clicking and no-instruction conditions, such that the average score of perception of the environment issue importance was significantly higher for subjects in the clicking group ($M = 0.91$, $SD = 0.13$) than for those in the other groups, including the control group ($M = 0.78$, $SD = 0.21$), no-instruction group ($M = 0.76$, $SD = 0.22$), and cursor-locating group ($M = 0.74$, $SD = 0.21$). The results indicated that manipulation of incidental exposure with the clicking instruction group only made a difference in those subjects' perceived issue importance.

For further investigation, this chapter turns to a regression analysis predicting subjects' perceived importance of the environment issue. The independent variables are three manipulations of incidental exposure—clicking, cursor-locating, and no-instruction—and two unobtrusive measures—time spent on news story Web pages and frequency visiting them. The analysis included a series of variables as controls. They consist of demographics (gender and race), news media use (TV news, newspaper, online news, magazine, and radio), and political variables—party identification, political knowledge, interest, and ideology.

The results in Table 6.5 provide important evidence that people's incidental exposure to news online contributes to people's learning of a common agenda. The clicking condition of incidental exposure was found to significantly predict subjects' perception of the importance of the environment issue, controlling for demographics,

[12] The reported statistics are from Tukey post hoc tests. Both Tukey and Scheffe tests were run and found the results were the same with slight differences in p value.

political variables, and news media use (β = 0.32, t = 4.0, p < 0.01). The findings indicated that individuals incidentally exposed to news in the clicking group are more likely to perceive the environment issue as important.

Table 6.5: Regression Analyses of Perceived Environment Issue Importance: Standardized Coefficient (SE).

Demographics	
Female	.04 (.03)
White	.00 (.03)
Political variables	
Political knowledge	-.11 (.06)†
Political interest	.25 (.07)**
Party identification	.00 (.01)
Ideology	-.05 (.01)**
News media use	
Television	-.03 (.01)*
Newspaper	.00 (.01)
Online	.01 (.01)
Magazine	.01 (.01)
Radio	.00 (.01)
Incidental exposure	
No-instruction exposure	-.01 (.04)
Cursor-locating exposure	.01 (.04)
Clicking exposure	.15 (.04)**
Constant	.75 (.07)**
R-square	0.34

n=194; +p < 0.10, *p < 0.05, **p < 0.01

However, neither cursor-locating (β = 0.03, t = 0.31, p = 0.76) nor no-instruction measure (β = -0.02, t = -0.26, p = 0.80) was found to significantly predict subjects' perceived importance of the environment issue. Note that the significant bivariate relationship of the cursor-locating measure with the dependent variable disappeared in

the multivariate analysis. Some control variables also significantly predicted perception of the environment issue importance. Political interest was found to have a significant relationship with the dependent variable (β = 0.30, t = 3.63, p < .01). For every 1 unit increase in interest, perception of the environment issue importance grows about 25 percent. Political ideology also was found to significantly predict perceived importance of the environment issue (β = -0.34, t = -3.13, p < .01). The more conservative an individual is, the less he or she perceives the environment issue as important. Political knowledge was found to have a marginally significant relationship with the dependent variable (β = -0.14, t = -1.86, p = 0.07). Among media use variables, TV news viewing was found to significantly predict perceived importance of the environment issue (β = -0.18, t = -2.49, p < .05). For every 1 unit increase in TV news viewing, the perception of importance declines about 3 percent. The remaining media use variables were found to have no significant relationship with the perceived importance of the environment issue. Neither were demographics.

In order to investigate effects of incidental exposure in more detail, another set of regression analyses were performed including unobtrusive measures as independent variables. As explained above, the unobtrusive measures are time spent on news stories and frequency of visiting the Web pages of news stories. Table 6.6 provides a summary of these regression results. The two unobtrusive measures have a multicollinearity problem with each other, so each was included into a regression model separately. In Model 1, time spent on news was found to significantly predict perceived importance of the environment issue (t = 3.73, p < 0.01), controlling for other manipulations of incidental exposure as well as for demographics, political variables, and news media use. The findings indicate that length of time spent on reading news stories contributes to perception of issue importance, regardless of experimental conditions.

Table 6.6: Regression Analyses of Perceived Environment Issue Importance with Unobtrusive measures of incidental exposure: Standardized coefficient.

	Model 1	Model 2
Demographics		
Female	.11	.10
White	-.01	-.01
Political variables		
Political knowledge	-.13†	-.14†
Political interest	.29**	.28**
Party identification	.04	.05
Ideology	-.34**	-.34**
News media use		
Television	-.18*	-.18*
Newspaper	.01	.02
Online	.07	.08
Magazine	.01	.02
Radio	.03	.04
Incidental exposure		
No-instruction exposure	-.12†	-.13†
Cursor-locating exposure	-.02	-.05
Time spent on news	.27**	
Frequency of visiting news		.24**
R-square	0.33	0.32

Note: Two unobtrusive measures of incidental exposure are separately included into model, because they have shown multicollinearity problems. Clicking exposure also was excluded from the analysis due to multicollinearity. Standardized coefficients are presented due to difference in scales. [n=194; +$p < 0.10$, *$p < 0.05$, **$p < 0.01$]

In Model 2, the frequency of visiting news sites also was found to have a significant relationship to perception of importance of the environment issue ($t = 3.28$, $p < 0.01$). The results illustrate that the individuals who visit Web sites with news stories more frequently are more likely to perceive the environment issue as important. The regression results with unobtrusive measures demonstrate that what matters is the actual

reading of news stories resulting from incidental exposure rather than mere exposure to headlines of news stories.

Supplementary Analysis

This study employed a supplementary analysis using the CJCR survey, to evaluate the findings from the experimental study. As discussed in Chapter 3, the measurement of individual-level agenda-setting effects has been a tough task for researchers. Nevertheless, a number of methods have been developed. Following Tsfati (2003), this study regards the dependent variable as the likelihood that respondents mention the top issue in the media agenda. In Chapter 4, this study found the top issue to be the economy, according to this study's content analysis. As such, mention of the economy was coded 1 if a respondent answered "economy" to the open-ended "most important problem" question and coding 0 for all other answers, including "don't know" and "refused."

Table 6.7 illustrates zero-order correlations between mentioning the economy as the most important issue and the survey incidental exposure measures. The correlation analysis found that the measure of incidental news exposure online has no significant association with individuals' mentioning of the economy as the most important issue (r = 0.05, $p > 0.1$).

Table 6.7: Zero-Order Correlations between Mention of Economy and Online Incidental Exposure.

	Incidental news exposure	Incidental news exposure, dichotomized
Mention of Economy	.05	.07*
N	998	998

*$p < 0.05$

However, the correlation between the incidental news exposure and mention of the economy was found to be positive and significant when the exposure measure was dichotomized (r = 0.07, p < 0.05). Though the correlation was very weak, it is worth running further analysis, because the self-report format of the incidental exposure measure has been criticized for lack of reliability.

Table 6.8: Logistic Regression Analyses of Mentioning Economy as the Most Important Issue: Logistic Regression Coefficient (SE).

	Model 1	Model 2
Demographics		
Age	.00 (.01)	.00 (.01)
Female	-.03 (.18)	-.04 (.18)
Education	.00 (.07)	.00 (.07)
White	-.40 (.27)	-.40 (.27)
Income	.06 (.03)*	.06 (.03)*
Political variables		
Political identification	.05 (.47)	.05 (.47)
Ideology, social	-.19 (.48)	-.21 (.48)
Ideology, economic	.47 (.54)	.47 (.54)
Political knowledge	.35 (.37)	.36 (.37)
Media Use		
Internet use	-.02 (.16)	-.00 (.15)
Network TV news	.12 (.06)*	.12 (.06)†
Cable TV news	-.14 (.05)**	-.14 (.05)**
Local TV news	.07 (.07)	.08 (.07)
Radio news	-.06 (.04)	-.06 (.04)
Print newspaper	-.04 (.05)	-.03 (.05)
Online newspaper	.04 (.05)	.04 (.05)
Print magazine	-.03 (.08)	-.03 (.08)
Online magazine	-.05 (.07)	-.05 (.07)
Incidental exposure		
Continuous	.06 (.05)	
Dichotomous		.50 (.35)
Constant	.37 (1.07)	.05 (1.09)
Nagelkerke R-square	0.06	0.06

n=779; $^{\dagger}p < 0.1$, *p <0.05, **p <0.01

Table 6.8 summarizes results from logistic regression analyses of mentioning the economy as the most important issue. A continuous measure of incidental news exposure was included in Model 1, and a dichotomous measure in Model 2. In Model 1, incidental news exposure online was found to have no significant relationship with mention of economy. Some control variables were found to have a significant relationship with the dependent variable. Income was found to positively predict the mention of the economy ($B = 0.06$, $p < 0.05$). Among news media use, network TV news viewing was found to have a positive relationship with the mentioning of the economy ($B = 0.12$, $p < 0.05$), while cable TV news viewing was found to have a negative relationship ($B = -0.14$, $p < 0.01$). Results in Model 2 are not much different from those in Model 1. Incidental news exposure was found to have no significant relationship with the mention of the economy, though the measure was dichotomized. Income and cable TV news viewing were again found to have significant relationships with the dependent variable, while the effect of network TV news viewing was marginalized.

Awareness of News Events

In order to investigate the effect of incidental exposure on people's awareness of news events, this study conducted a series of analyses using recognition and recall of news events as dependent variables. Much research on human memory has been devoted to the relationship between recognition and recall and has built various theories about their mutual relation and differences from each other (Haist, Shimamura, & Squire, 1992). In general, recognition is defined as awareness that something perceived has been perceived before and recall refers to remembering what has been previously experienced.

This chapter's investigation on news event awareness began with a bivariate analysis to see basic relationships between key variables, followed by an analysis of variance and multivariate analysis. Table 6.9 presents zero-order correlations between

incidental exposure variables and subjects' recognition and recall measures. The exposure variables again include both manipulated and unobtrusive measures. The variables of manipulation were coded such that 1 indicates belonging to the treatment conditions.

Table 6.9: Zero-Order Correlations between Incidental Exposure and Recognition/Recall of News Events.

	Recognition	Recall
Manipulation		
No-instruction exposure	0.15*	0.07
Cursor-locating exposure	-0.18*	-0.20**
Clicking exposure	0.31**	0.50**
Unobtrusive measure		
Time spent	0.38**	0.61**
Frequency of visiting	0.33**	0.50**
N	194	194

* $p < 0.05$, ** $p < 0.01$ (2-tailed)

Incidental news exposure items, both manipulative and unobtrusive, were found to have significant correlations with subjects' recognition of news events described in news story stimuli. Out of five measures of incidental exposure, four have positive and significant associations with the recognition of news events. It was found that subjects in the clicking group were more likely to recognize information in the news stories than others ($r = 0.31$, $p < 0.01$), and so were those in the no-instruction group ($r = 0.15$, $p < 0.05$). Unobtrusive measures of incidental exposure also were found to have a positive

and significant relationship with the recognition of news events. The more time subjects spent on news story Web pages, the more likely they were to recognize news events covered by stimulus news stories ($r = 0.38$, $p < 0.01$). Further, subjects who visited news story Web pages more often were more likely to report higher scores in recognition of the news ($r = 0.33$, $p < 0.01$). These findings are consistent with Hypothesis 6 that incidental news exposure online contributes to people's recognition of the exposed information. However, the correlation between exposure for the cursor-locating group and recognition was found to be negative ($r = -0.18$, $p < 0.05$).

In the correlation analysis for recall, three measures of incidental exposure had positive and significant relationships with recall of the information exposed. Clicking exposure was found to have a significant association with recall of information in the news stories ($r = 0.50$, $p < 0.01$). Unobtrusive measures of incidental exposure also were found to have positive and significant relationships with recall of news events. The more time subjects spent on news story Web pages, the more likely they were to recall information covered by stimulus news stories ($r = 0.61$, $p < 0.01$). Further, subjects who visited news story Web pages more often were more likely to have high scores for recall of the news ($r = 0.50$, $p < 0.01$). These findings are consistent with Hypothesis 7 that incidental news exposure online contributes to people's recall of the news events covered. However, no-instruction exposure was found to have no significant association with recall, and further, the correlations between cursor-locating exposure and recognition were found to be negative ($r = -0.20$, $p < 0.01$). These findings are not consistent with the hypotheses.

This chapter conducted an analysis of variance to evaluate whether the manipulation of incidental exposure affected subjects' recognition and recall of news events. The measures of recognition and recall were analyzed with a one-way ANOVA.

Table 6.10 illustrates the means, standard deviations and sample sizes. Table 6.11 shows the complete ANOVA source table.

Table 6.10: Mean Scores of Recognition and Recall (SD).

	Group			
	Control	No-instruction	Cursor-locating	Clicking
Recognition	.35 (.31)	$.63_a$ (.40)	.39 (.36)	$.71_a$ (.35)
Recall	0 (0)	$.25_b$ (.35)	.09 (.21)	$.48_c$ (.38)
N	54	44	44	52

Note. Cell entries are the mean scores of recognition and recall obtained from four post-test questions. Subscript denotes significant difference between means, where the same letters mean no difference with each other.

The analysis of variance found a significant impact of treatments on subjects' recognition, $F(3, 190) = 12.55$, $p < 0.01$. The findings indicated that manipulation of incidental news exposure online caused a significant difference between the four groups in recognition of news events. Post hoc tests generated a significant difference between the clicking group and the group under control conditions ($p < 0.01$) and between the no-instruction group and the control group ($p < 0.01$). There was no significant difference between the cursor-locating group and the control conditions group ($p = 0.93$) and between the clicking and no-instruction groups ($p = 0.70$).[13] Results indicated that the mean score of recognition was significantly higher for subjects in the clicking group ($M = 0.71$, $SD = 0.35$) and the no-instruction group ($M = 0.63$, $SD = 0.40$) than for those in the control group ($M = 0.35$, $SD = 0.31$) and the cursor-locating group ($M = 0.39$, $SD = 0.36$).

[13] Both Tukey and Scheffe tests were run and found that the results were overall the same with slight differences in p value. Statistics from Tukey tests were reported.

The analysis also found significant effects of treatment conditions on recall of news events, $F(3, 190) = 30.39$, $p < 0.01$. The results indicated that manipulation of incidental news exposure online made a significant difference between the four groups in recognition of news events.

Table 6.11: Source Table for ANOVA for Recognition and Recall by Incidental Exposure.

Source		SS	df	MS	F	p
Recognition	Between groups	4.72	3	1.58	12.55	0.00
	Within groups	23.84	190	0.13		
	Total	28.56	193			
Recall	Between groups	6.94	3	2.32	30.39	0.00
	Within groups	14.47	190	0.08		
	Total	21.42	193			

Subsequent post hoc tests found a significant difference between the clicking group and control conditions group ($p < 0.01$) and between the no-instruction and the control conditions groups ($p < 0.01$). Further, the mean of the clicking group was found to be significantly different from that of the no-instruction group ($p < 0.01$). There was no significant difference between the cursor-locating and the control conditions groups ($p = 0.43$).[14] Results indicated that the mean score of recall was significantly higher for subjects in the clicking group ($M = 0.48$, $SD = 0.38$) than for those in the control group ($M = 0$, $SD = 0$), cursor-locating group ($M = 0.09$, $SD = 0.21$), and no-instruction group ($M = 0.25$, $SD = 0.35$). Further, the mean recall score of no-instruction group also was significantly higher than that of the control group and the cursor-locating group.

[14] Statistics from Tukey tests were reported here.

This chapter turns to a multivariate analysis for a more rigorous evaluation of the hypotheses, using regression models predicting subjects' recognition and recall of news events. The independent variables are three manipulations of incidental exposure — clicking, cursor-locating, and no-instruction — and two unobtrusive measures — time spent on news story Web pages and frequency visiting them. A number of variables were included as controls, such as demographics (gender and race), news media use (TV news, newspaper, online news, magazine, and radio), and political variables—party identification, political knowledge, interest, and ideology.

The results in Table 6.12 provide important evidence that people's incidental news exposure facilitates people's recognition and recall of news events covered in the stories. Clicking exposure was found to significantly predict subjects' recognition (β = 0.38, t = 4.37, $p < 0.01$) and recall (β = 0.61, t = 7.85, $p < 0.01$) of news events, controlling for demographics, political variables, and news media use. No-instruction exposure also was found to be a significant predictor of recognition (β = 0.32, t = 3.69, $p < 0.01$) and recall (β = 0.33, t = 4.29, $p < 0.01$). The results indicated that people incidentally exposed to news in the clicking group and the no-instruction group were more likely to recognize and recall news events depicted in the news stories.

However, the cursor-locating measure was found to have no significant relationship with subjects' recognition and recall of news events. Note that the significant bivariate relationship of the cursor-locating measure with the dependent variable vanished in the multivariate analysis. Some control variables were found to significantly predict recall of news events, whereas no control variable was found to predict recognition. Ideology was found to have a significant relationship with the dependent variable (β = -0.23, t = -2.16, $p < .05$). The more conservative an individual is, the less he

or she recalls news events. Party identification was found to have a marginally significant relationship with the dependent variable ($\beta = 0.21$, $t = 1.93$, $p = 0.06$).

Table 6.12: Regression of Recognition and Recall of Incidentally Exposed News Story: Standardized Coefficient (SE).

	Recognition	Recall
Demographics		
Female	.04 (.06)	.08 (.05)
White	-.01 (.06)	-.05 (.05)
Political Orientations		
Political knowledge	.17 (.12)	.13 (.09)
Political interest	.06 (.14)	-.12 (.11)
Party identification	.02 (.02)	.04 (.02)†
Ideology	-.03 (.03)	-.05 (.02)*
News media use		
Television	-.02 (.02)	-.05 (.02)**
Newspaper	.01 (.02)	.01 (.02)
Online	.01 (.02)	.01 (.02)
Magazine	.02 (.03)	.01 (.02)
Radio	.01 (.02)	-.00 (.02)
Incidental exposure		
No-instruction exposure	.29 (.08)**	.27 (.06)**
Cursor-locating exposure	.03 (.08)	.07 (.06)
Clicking exposure	.32 (.07)**	.45 (.06)**
Constant	.19 (.14)	.08 (.11)
R-square	0.20	0.38

n=194; +$p < 0.10$, *$p < 0.05$, **$p < 0.01$

Among media use variables, TV news viewing was found to significantly predict recall of news events (β = -0.21, t = -3.0, $p < .01$). For every 1 unit increase in the measurement scale of TV news viewing, the recall score of news events declines by

about 5 percent. The remaining media use variables were found to have no significant relationship with the perceived importance of the environment issue. Neither did demographics.

Another set of regression analyses was performed including unobtrusive measures of incidental exposure as independent variables. The unobtrusive measures are time spent on news stories and frequency of visiting Web pages of news stories. Table 6.13 presents a summary of findings from these analyses. The two unobtrusive measures have a multicollinearity problem with each other, so each was included into a separate regression model. The clicking exposure was dropped from the analysis, due to multicollinearity with the two unobtrusive measures.

In Model 1, time spent on news was found to predict significantly recognition of news events ($t = 4.63$, $p < 0.01$), controlling for other manipulations of incidental exposure as well as for demographics, political variables, and news media use. The findings indicate that people who spent more time reading news stories were more likely to recognize news events, regardless of experimental conditions. Further, no-instruction exposure was found to be a significant predictor of recognition of news events, even controlling for time spent on news Web pages ($t = 2.67$, $p < 0.01$). The results indicated that people in the no-instruction condition were more likely to recognize news events, regardless of the amount of time they spent on the news Web pages. In Model 2, frequency of visiting news stories was found to significantly predict recognition of news events ($t = 3.57$, $p < 0.01$), controlling for other manipulations of incidental exposure as well as for demographics, political variables, and news media use. The results indicated that people who more frequently visited news Web pages were more likely to recognize news events, regardless of experiment conditions. Further, no-instruction exposure was found to be a significant predictor of recognition of news events, even controlling for

frequency of visiting the news Web pages ($t = 2.35$, $p < 0.05$). The findings indicated that people in the no-instruction condition were more likely to recognize news events, regardless of the frequency of visiting the news Web pages.

Table 6.13: Regression of Recognition and Recall with Unobtrusive Measures of Incidental Exposure: Standardized Coefficient.

	Recognition		Recall	
	Model 1	Model 2	Model 3	Model 4
Demographics				
Female	.05	.04	.12†	.10
White	-.03	-.03	-.10	-.10
Political Orientations				
Political knowledge	.13	.11	.13†	.10
Political interest	.03	.01	-.10	-.13
Party identification	.13	.14	.24*	.26*
Ideology	-.14	-.14	-.22*	-.22*
News media use				
Television	-.06	-.06	-.21**	-.21**
Newspaper	.05	.06	.07	.09
Online	.07	.07	.07	.07
Magazine	.03	.03	-.00	.01
Radio	.03	.03	.01	.01
Incidental exposure				
No-instruction exposure	.21**	.18*	.15*	.12
Cursor-locating	-.01	-.05	.04	-.04
Time spent on news	.36**		.62**	
Frequency of visiting news		.29**		.47**
R-square	0.21	0.17	0.45	0.32

Note: Two unobtrusive measures of incidental exposure are separately included into regression models, because they have shown multicollinearity problems. Standardized coefficients are presented due to difference in scales.

n=194; +$p < 0.10$, *$p < 0.05$, **$p < 0.01$

In Model 3, time spent on news was found to significantly predict recall of news events ($t = 9.45$, $p < 0.01$), controlling for other manipulations of incidental exposure as well as for demographics, political variables, and news media use. The findings indicated that people who spent more time reading news stories were more likely to recall news events, regardless of experiment conditions. Further, no-instruction exposure also was found to be a significant predictor of recall of news events, even controlling for time spent on news Web pages ($t = 2.40$, $p < 0.05$). The findings indicated that people in the no-instruction condition were more likely to recall news events, regardless of the amount of time they spent on the news Web pages. In Model 4, frequency of visiting news stories was found to significantly predict recall of news events ($t = 6.45$, $p < 0.01$), controlling for other manipulations of incidental exposure as well as for demographics, political variables, and news media use. The results indicated that people who more frequently visited news Web pages were more likely to recall news events, regardless of experiment conditions.

CONCLUSION

This chapter presents evidence of incidental exposure effects on people's acquisition of a common agenda. The findings of the experimental study indicated that incidental exposure to news online significantly contributes to people's learning of important issues to think about. Also, the incidental news exposure facilitates individuals' recognition and recall of information covered by the exposed news stories. The supplementary analysis using the CJCR survey did not provide evidence supporting the hypotheses. This is not surprising, because the measure of incidental exposure in surveys has a fundamental problem that severely threatens reliability of the measurement. Due to these limits, the null findings of incidental news exposure do not significantly undermine the validity of the findings from the experiment. This point is discussed in detail in the final chapter.

It is likely that members of a society will have greater difficulty in reaching a consensus about what are important issues in the new information environment where both the audience and the media have an unprecedented number of choices in media channels and content. To reach such consensus, the process of public opinion should meet several conditions. Among them is that the alternative route of learning, incidental news exposure, does contribute to people's learning of a common agenda and awareness of the issues exposed. The evidence in Chapter 6 suggests that there is such a route on the Internet, a central part of the new media environment.

Chapter 7: Implications

FINDINGS SUMMARY

The explosive growth in channels and content has transformed the media environment into a new creature full of media options that the audience can select for consumption. The change has raised a plausible concern that society could be fragmented as the audience selectively uses information from the media to the maximum extent. It is inevitable that people exposed to only information extremely tailored to their individual needs and wants will fail to have common social experiences. People might share experience within their community, but they do not communicate across the border between the communities. From a perspective of rational choice, it is most likely that individuals pursue maximum utility from the media, and thus selectively use the media. The resulting fragmentation will severely threaten the functioning of democracy based on consensus about common problems in a society and discourse for their solutions. This dissertation has investigated whether society is destined to fragment as some pessimists fear.

For the investigation, this dissertation conceptualized fragmentation as a situation where members of a community fail to have shared experiences. Next, this study argued that such experiences are acquired from the media. Then, fragmentation can be examined by testing whether people learn a common agenda from the media in the new media environment. This dissertation hypothesized that the public will acquire a common agenda by means of incidental news exposure facilitated by the environmental factors of online communication. Due to the minimal information cost involved in the process of incidental learning, rational individuals will still be exposed to news and thus learn a common agenda while they are online. To test this series of arguments, this

dissertation first examined the homogeneity of the media agenda across news outlets and positive aggregate associations between the media and the public agenda. Chapter 4 provides evidence of this homogeneity and association by replication of agenda-setting effects at aggregate levels. A content analysis of three newspapers and three network television newscasts found significant positive correlations between news agendas of different media outlets. The mean correlation of the 15 individual comparisons was +.93, suggesting a high level of homogeneity of the media agenda. Evidence also was found of positive associations between the media and the public agenda — basic agenda-setting effects. A replication of the seminal agenda-setting study (McCombs & Shaw, 1972) found that the correlation between the public agenda captured by the CJCR survey and the media agenda represented by the six news outlets' agenda was +.82.

This dissertation changed gears to investigate the nature of incidental news exposure online in Chapter 5. A condition that incidental learning should meet is that it should not depend on individuals' differences in political predisposition, but on the environmental factors of online communication. Chapter 5 examined this point with the criteria of incidental learning: ubiquity and effortlessness (Frensch, 1998). A series of analyses based on the CJCR survey found that the overall frequency of Internet use significantly predicted individuals' reports of incidental news exposure online. The finding suggested that there is an environmental factor that predicts the incidental exposure. There also was a finding that individuals' political predisposition is not relevant to the report of incidental news exposure frequency. Further analysis found that certain online activities, such as getting entertainment/sports information, significantly predicted the incidental exposure. Chapter 6 provided detailed evidence of actual effects that incidental news exposure has on public opinion. An experimental study manipulating the existence and degree of incidental exposure found that treatment

conditions had significant impact on people's learning of a common agenda. The study also found that the incidental exposure influenced people's recognition and recall of information carried by stimulus news stories. Further analysis using unobtrusive measures of incidental exposure reaffirmed the results. Overall findings suggested that incidental exposure had effects on people's learning of a common agenda and awareness of the news events in the exposed information.

GENERAL DISCUSSION

The replication of basic agenda-setting effects generated evidence of association between the media and the public agenda. The evidence of Chapter 4 is a foundation for the entire argument of this dissertation on the fragmentation debate. Nevertheless, without an explanation of the mechanism of such relationships at individual levels, the findings can be easily criticized for ecological fallacy (Robinson, 1950). In this light, incidental exposure is the key concept that explains at least some portion of such a mechanism, and thus it served as a main variable of analysis in this dissertation.

The findings of Chapter 5 played an important role in the discussion of the audience fragmentation. Recall the definition and the process of fragmentation. It is possible that people expose themselves to information maximally tailored to their needs and wants in the new media environment because of features such as an almost infinite number of options of media channels and content. When such a process of news exposure continues, people with different needs and wants will have completely different experiences, and thus, different agendas. Obviously, individual political belief will have considerable impact on such needs and wants in terms of political information gain. Hence, incidental exposure should not be ruled by the political belief system in order to work as an alternative route of getting common experiences. Chapter 5 presented the evidence for such an argument, suggesting that incidental news exposure online is

influenced by environmental factors, not by individual differences in political predisposition. Chapter 5 provided interesting results while exploring antecedents of incidental news exposure. Controlling for many powerful variables, a multivariate analysis found three significant predictors of incidental exposure: using a search engine, finding difficult information, and getting entertainment/sports information. All of the three predictors shed light on how incidental exposure to news occurs on the Internet. The first and second predictors belong to one of Downs's incidental learning categories: exposure to political information while doing other work (Downs, 1957). In the new media environment, acts of finding difficult information work as the "other work" in the Downsian concept of incidental learning. It is meaningful that this study found a route of incidental exposure to political information consistent with Downs's categorization in an online setting. The link between the third predictor and the Downsian categorization is even more palpable. Downs (1957) suggested entertainment as another category of incidental exposure and presented a vivid example — newsreels in the theater. The findings in Chapter 5 indicated that people are incidentally exposed to political information through such routes in the online media environment. The results are consistent with a body of literature on the effects of soft news or infotainment on people's learning about politics (e.g. Baum, 2002, 2003; Hollander, 2005). Searching for entertainment, people become informed about political information. However, these three factors are not working in a mutually exclusive manner. In most cases, searching for difficult information and entertainment/sports is performed by using a search engine like Google. As discussed in Chapter 2, the first Web page often includes "news results," when a search results are displayed. Many search engines also display today's news at their welcoming pages. Along with infotainment or soft news, these are contemporary examples of the Internet, comparable to Downs's "newsreel" in 1950s. Of course, the

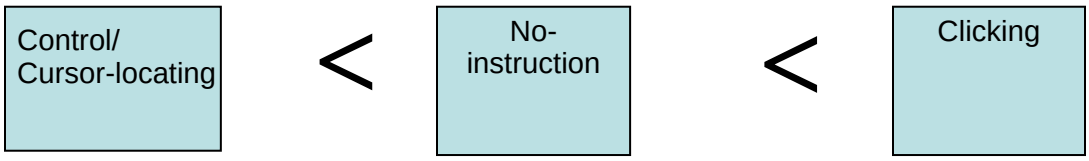
detailed relationship between different factors of online incidental exposure still warrants more rigorous studies. Further, the quality of effects that contemporary examples of the "newsreel" have on public opinion should be investigated more.

Though the experiment in Chapter 6 overall provided evidence supporting positive effects of incidental exposure on people's learning, the results are more complicated than that. In the study, only the clicking treatment condition was found to affect people's acquisition of a common agenda. Neither cursor-locating nor the no-instruction treatment has an impact on it. It is clear that viewing only the title of news stories cannot affect the agenda-setting process. The clicking treatment consisted of the most time-intensive, engaging form of incidental exposure, in which participants were instructed to click on a news story for a certain amount of time. Findings suggested that actual reading is a key factor in predicting individuals' learning of a common agenda. However, the null finding of the no-instruction treatment requires more explanation. Subjects in the group have no instructions about clicking or locating the cursor on banner ads leading to news stories. Thus, some in the group clicked and read the news stories while others did not. Then, it is valuable to explore what factors influenced such decisions. The factors may be individual characteristics, issue types, situational political context, and so forth. Unfortunately, the study design did not allow for addressing these questions. Future research may produce fruitful results in this matter. The findings on recognition and recall of news events also provide an interesting picture. The effect strength of manipulations can be expressed graphically in terms of the mean of recognition/recall measures.

Figure 7.1 illustrates the difference in effects of manipulations on recognition/recall measures. Again, exposure only to story titles in banner ads in cursor-locating condition did not influence recognition and recall of news events expressed in

the stimulus stories. However, this chapter found that the no-instruction treatment affected subjects' recognition and recall. The manipulation of no-instruction treatment has different effects on different dependent variables. This study does not provide a theoretical explanation for the difference, calling for further research.

Figure 7.1: Relationship between Experiment Groups.



Overall findings in this dissertation lend support to the argument that people are still able to learn a common agenda and thus share experiences as members of a society in the new media environment. Incidental news exposure works as a significant limiting force against the progress of fragmentation. Though the survey analysis in Chapter 5 found no significant effects of incidental exposure at the individual level on learning a common agenda, there are findings that indirectly provide evidence for such effects. Most opinion surveys include media use items to capture respondents' habitual exposure to news media. If a respondent answered no exposure to all items, he or she is very likely to selectively avoid news media. Such respondents are likely to have a different agenda, because of their selective exposure to other media contents than news. If there is a high correlation between the no-news group and news group, who answered yes or some frequency to at least one media outlet, it may indirectly suggest the effects of incidental exposure.

The 2004 National Annenberg Election Survey provides instrumental support for such analysis. In most surveys with a sample of 1,000 to 2,000, the small size of the no-

news group is prohibitive for conducting such correlation analysis. However, the 2004 NAES has a huge number of observations, 79,926, and provides a sizable sample of the no-news group (N = 1,426).

Table 7.1: The Most Important Issue Mentioned in the 2004 National Annenberg Election Survey: Frequencies (and Ranks).

	No-news group	News group
Iraq war/situation	144 (1)	9291 (2)
Other	139 (2)	4999 (4)
Economy	120 (3)	10407 (1)
Unemployment/job security/layoffs	74 (4)	4949 (5)
Terrorism/war on terrorism	61 (5)	6016 (3)
Lack of moral/family values	60 (6)	3260 (8)
Lack of religion/faith	51 (7)	1247 (13)
Politicians/government	50 (8)	2807 (9)
Health care	46 (9)	3670 (7)
Education	32 (10)	2231 (10)
Poverty/homelessness	32 (11)	1221 (13)
Violence/crime	26 (12)	750 (15)
Foreign policy	22 (13)	1634 (12)
National/homeland security	18 (14)	1787 (11)
Drugs	17 (15)	540 (17)
Dislike Bush/current leaders	16 (16)	908 (14)
Children's issues	12 (17)	469 (18)
Immigration/illegal aliens	12 (18)	568 (16)
Energy/rising gas prices	10 (19)	382 (20)
Taxes	8 (20)	384 (19)
Environment	7 (21)	301 (21)
Jobs going to other countries/outsourcing	2 (22)	190 (22)
Missing	467	20489
Total	1426	78500

Table 7.1 reports a list of issues rank-ordered by respondents' answers to a most important issue question. The rank order correlation between two groups' agendas was found to be +.94. This finding suggests that people who reported no exposure to news media are still exposed to and learn a common agenda in the media. Again, the result is not a direct support for incidental news exposure effects, in that there are other possible ways to have similar agendas, such as through interpersonal communication. Nevertheless, the high correlation between the no-news group and the remaining respondents' agendas strongly suggests effects of incidental exposure on people's learning of a common agenda. Further, findings of Chapter 4 also hint the effects of incidental exposure. The media agenda has strong correlations with the public agenda.

LIMITATIONS

The research strategy and methods used in this dissertation have a number of limitations. First, the social context at the time of the research limited this study. It is obvious that the global financial crisis starting from Wall Street meltdown enormously influenced both the news coverage of the media and people's opinions. Perception of issue importance, one of key variables in this dissertation, was heavily influenced by the context. The experiment was conducted in November of 2008, and the CJCR survey from December of 2008 to early January of 2009. Public opinion captured in both data sets was very likely to reflect such a social context. As a result, perceived issue importance measured by the most important issue question in the CJCR survey showed a skewed distribution. The economy was predominant in people's minds. Out of 998 total cases, 712 answered "economy" as the most important issue in society. The skewed distribution reduced variance in the variable of perceived issue importance and made it difficult to capture effects. The problem also put limits on the experimental study, albeit to lesser degree.

Another key variable, incidental news exposure, also has a limitation in terms of measurement. The definition of incidental exposure makes it difficult to measure individuals' likelihood or amount of incidental exposure to news on the Internet in surveys. Because most surveys rely on self-reported answers of respondents, incidental exposure that people do not actively seek out cannot be reliably measured. The limit in the measure might contribute to the null finding of incidental news exposure effects on people's learning of a common agenda in analyses of the CJCR survey data. It is highly probable that the combination of the two issues in the social context and measures exacerbated the problem of detecting the effects. To address this question, an experimental study was designed using manipulation of exposure conditions. The experimentation clearly improved the measurement of incidental exposure by artificially manipulating news exposure conditions. However, such artificial manipulation inevitably invites criticisms about external validity, the issue of all experimental studies.

The specific design of the experiment also has limitations, a laboratory setting to control exposure conditions in which subjects do their instructed tasks. Subjects were instructed to visit the laboratory once and to evaluate the quality of college information in stimulus Web sites. Though the experiment design followed a classic study of an agenda-setting experiment (Iyengar & Kinder, 1987), this study was different from the Iyengar and Kinder (1987) in the number of the subjects' visits to laboratory. The difference obviously affected duration of exposure to news stories. If subjects were to visit the laboratory for one week as in Iyengar and Kinder (1987) or in Althaus and Tewksbury (2002), findings might have been different. For instance, it is possible to find significant effects of no-instruction treatment conditions on learning a common agenda, if duration of exposure was longer than in the current study. Further, it is possible that additional tasks given to the cursor-locating and clicking treatment groups partially undermine the

incidental nature of news exposure. Manipulation of incidental news exposure needs more research even in laboratory experiments.

Perhaps one of the most important limitations of this dissertation is that it provides no explanation for incidental exposure based on longitudinal analyses. The main argument of this study is that incidental news exposure online works as a limiting force against the progress of fragmentation. Though ample evidence was presented for the incidental news exposure effects, it provides no argument about the longitudinal change of the incidental exposure to political information. Has the amount of incidental news exposure increased or decreased? The question is two-fold. The first is how people's incidental news exposure *online* changed over time. This question hinges on the changes of various features on the Internet. As penetration of Internet connection and broadband access increased, it is fairly predictable that incidental news exposure has increased over time since the beginning of the Internet. Still, it requires empirical evidence. The other is how the incidental news exposure *in general (online and offline)* changed over time. Prior (2007) argued that incidental news exposure in television has decreased since the introduction of cable TV. If incidental news exposure online cannot offset the decrease in television, it may result in a net decline in exposure to political information. Future research should address this question.

IMPLICATIONS FOR COMMUNICATION RESEARCH

The study of incidental news exposure has made many contributions to the research of communication in the new media environment. As reviewed above, research on incidental news exposure has been relatively scarce in political communication, compared to that on incidental ad exposure in the field of marketing or advertising. One reason for such scarcity is that news or public affairs information has been ubiquitous and difficult to avoid. However, the world has changed with the development of new

technologies, which have transformed the media environment to one with almost infinite options of media channels and content. Though public affairs information is still ubiquitous now, is no longer difficult to filter out. News has never been easier to abandon. Unlike news, commercial advertising by nature has struggled to draw consumers' attention as much as possible. This has put each advertising unit under severe competition with other advertising units or with different kinds of information, such as news, providing a strong motivation for research on incidental exposure. In the new media environment, news has been put into the same position with advertising in terms of competition for getting people's attention. In this sense, the findings regarding effects of incidental news exposure on people's learning process can contribute to an understanding of news exposure in the new media environment and suggest meaningful methods to the news media industry for how to compete with others.

Findings about incidental exposure effects have implications for classic mass communication theories. As many recent studies (e.g. Graf & Aday, 2008; Iyengar & Hahn, 2009; Stroud, 2008) indicated, selective exposure is on the rise in communication research in the new media environment. Obviously, it is due to the high selectivity of the new media. In particular, partisan selective exposure has been found to play an important role in the political process. The resurgence of selective exposure has triggered debates about the viability of classic mass communication theories such as agenda setting and cultivation (Chaffee & Metzger, 2001). The concept of mass communication is losing its firm ground due to the high selectivity in the new media environment. Hence, it is inevitable that these theories face challenges to address the environmental changes. In this regard, Bennett and Iyengar (2008) recently predicted that valence-based theories such as persuasion will be significantly influenced by selective exposure, whereas volume-based theories such as agenda setting, priming, or indexing will not. Selective

exposure depends on individuals' political predispositions, which significantly influence political judgments based on preference. Therefore, valence-based information is a primary target of selective exposure. As Bennett and Iyengar (2008) indicated, the future of mass communication theories warrants theory building and empirical testing. The findings of incidental news exposure will contribute to the theory building. As another route to gain information, incidental learning sheds some light on relationships between the classic theories and the new media environment.

The effects of mass communication do not usually come from specific media outlets or channels, but from the entire mass media. Though people tend to have a preference for specific media channels, their exposures to mediated information are not limited to such channels only. Mass communication outlets are inter-related and people get their news and information from a gestalt of media channels — a phenomenon of civic osmosis (McCombs, 2008). In their seminal study of the 1940 elections, Lazarsfeld and colleagues (1944) found that survey respondents who were highly exposed to one medium of communication also tended to be highly exposed to other media. People hardly remembered where they received information about breaking news (Funkhouser & McCombs, 1972). In 1996 Spanish national election (McCombs, Lopez-Escobar, & Llamas, 2000), the public agenda had a similar strength of correlations with the agenda of their primary source of information as well as with correlations with the agenda of competing media outlets. Incidental news exposure can be used to investigate the phenomenon of civic osmosis. When people cannot remember where they got a specific piece of information, they were likely to gain it through the process of incidental exposure. Investigation of this mechanism will be fruitful in understanding civic osmosis.

IMPLICATIONS FOR MEDIA AND DEMOCRACY

Findings of this dissertation clearly indicate that the public can share experiences by learning a common agenda from the media on the Internet, the medium considered the most prone to selective exposure. Though audience members might expose themselves to information online fairly selectively, the process of the inadvertent learning still works during their online activities, at least for learning a common agenda and recognition and recall of news events. In other words, the Internet has an innate force working against the progress of fragmentation. Effects of incidental news exposure online put a significant limit on fragmentation. Members of society will still talk about the same social problems and deliberate for their solutions in the new media environment, notwithstanding the many opportunities for selective exposure. However, the argument of limited fragmentation should be understood with the definition of fragmentation in this dissertation. Recall that this study conceptualized fragmentation as a situation where members of society no longer hold shared experiences, or common agendas. The definition does not address any part of opinion formation or capability to reach consensus on solutions to social problems. Though members of society share the same list of issues to think about, it is still possible that different groups have extremely polarized opinions on the issues, and further, cannot even generate deliberative discussion with each other. The concern of fragmentation at this dimension is still a matter of question. Nevertheless, findings of this dissertation assert that society meets a minimum requirement to form a community in the new media environment.

Media effects have both positive and negative sides in terms of their democratic function. For instance, the positive function of agenda setting includes enhancing group consensus within the larger society (Shaw & Martin, 1992) and mobilizing a mass of people to solve problems (Bosso, 1989); the negative function is ignorance of minority

group agendas (Chaffee & Metzger, 2001). The negative and positive aspects of agenda setting can be understood with simplified forms of dichotomies: diversity v. fragmentation or consensus v. manipulation. When the audience members enjoy an extreme number of choices without an inadvertent route of exposure, they are likely to lose common experiences, which leads to a fragmented society. Advance of diversity in society may cause problems in democracy, when audience specialization converts to fragmentation. On the other hand, when media effects are too powerful and the audience members are extremely passive, the society will see a problem of manipulation, long feared as a powerful propaganda tool since the early days of communication research. Progress of consensus also may bring challenges, when control of the public space for discourse falls into the hands of a few. Though phrased differently, the two dichotomies refer to the same relationship between active audience and powerful mass media. While this dissertation has directly addressed the question of the second dichotomy by raising a question about the ominous prediction of fragmentation, it also touches on the first dichotomy. What matters is the balance between audience selectivity and mass media effects. The positive sides of the dichotomies, consensus and diversity, can be achieved only through the balance. Solutions to problems in each dichotomy can be found from the other side of the continuum between diversity and unity. Common experiences promoting social consensus prevent specialized audience from moving ahead towards a fragmented situation. Control of the public discourse by diverse entities maintains the healthy status of a social or national integrity. Therefore, maintenance of a democratic balance between individual diversity and social unity means keeping experiences shared among diverse perspectives, in other words, maintaining rational connections between groups. Findings of incidental news exposure will help understanding the balance between audience and media powers.

One of the oldest questions in political communication is whether the public or voters are informed enough to make democracy work properly (e.g. Converse, 1964). Many have feared that selective exposure reduces the amount of public affairs information to which the public are exposed, and thus it leads to undermining the healthy functioning of democracy (e.g. Prior, 2007). Though this dissertation provides no evidence of changes in the amount of incidental news exposure, it still suggests that incidental news exposure functions to inform people of public affairs in the new media environment. Future research on incidental exposure effects will generate more knowledge on this question.

Appendix A: Survey Questions

DEMOGRAPHICS

What was your age on your last birthday?

What is your gender?

What is the highest level of education you have completed?

- Less than High School
- High School / GED
- Some College
- 2-year College Degree
- 4-year College Degree
- Master's Degree
- Doctoral Degree
- Professional Degree (JD, MD)

Last year, what was your family's total household income, before taxes? (If you are supported by your parents, what would you estimate for their total household income, before taxes?

What is your race?

- White/Caucasian
- African American
- Hispanic
- Asian
- Native American
- Pacific Islander
- Other

GENERAL INTERNET USE

How often do you go online?

- Every day

- 5 to 6 days per week
- 3 to 4 days per week
- 1 to 2 days per week
- Once every few weeks
- Less often
- Never

NEWS MEDIA USE

On your television, how often do you watch *network* TV news (such as ABC, NBC, and CBS) to get information about current events, public issues, or politics?

On your television, how often do you watch *cable* TV news (such as CNN, Fox News, and MSNBC) to get information about current events, public issues, or politics?

On your television, how often do you watch *local* TV news to get information about current events, public issues, or politics?

How often do you listen to the radio for news—that is, information about current events, public issues, or politics?

How often do you read a *print* version of a newspaper for news—that is, information about current events, public issues, or politics?

How often do you read an *online* version of a newspaper for news—that is, information about current events, public issues, or politics?

How often do you read a *print* version of a magazine such as Time or Newsweek for news—that is, information about current events, public issues, or politics?

- Weekly
- 2-3 Times a Month
- Once a Month
- Less than Once a Month
- Never

How often do you read an *online* version of a magazine such as Time.com or Newsweek.com for news—that is, information about current events, public issues, or politics?

INCIDENTAL EXPOSURE TO NEWS

When you're on the Internet, how often do you encounter news when you were going online for a *different* purpose?

POLITICAL VARIABLES

Generally speaking, do you think of yourself as REPUBLICAN, DEMOCRAT, or INDEPENDENT? Use a scale of 0 to 10, where 0 is strong Republican and 10 is strong Democrat.

Where would you place YOURSELF on a scale of 0 to 10, where 0 is strong conservative and 10 is strong liberal? (On Social Issues)
Where would you place YOURSELF on a scale of 0 to 10, where 0 is strong conservative and 10 is strong liberal? (On Economic Issues)

POLITICAL KNOWLEDGE BATTERY

Who is the British Prime Minister?

- Gordon Brown
- Stephen Harper
- James Cameron
- Tony Blair

Who is the Speaker of the U.S. House of Representatives?

- Nancy Pelosi
- Harry Reid
- Ben Bernanke
- Hillary Clinton

Who is the Vice President-elect of the United States?

Sarah Palin is the governor of which state?

INTERNET ACTIVITES

How often do you use the Internet for the following, where 1 is never and 10 is all the time:

A. Get information for work or school
B. Use a search engine
C. Find difficult information

D. Subscribe to RSS feeds for NEWS, such as via Google Reader or Outlook RSS reader
E. Use Twitter to get my news
F. Get entertainment / Sports information
G. E-mail
H. Instant messaging
I. Video chatting
J. Making phone calls (such as via Skype)
K. Social networking (such as Facebook or MySpace)
L. Do banking or get financial information

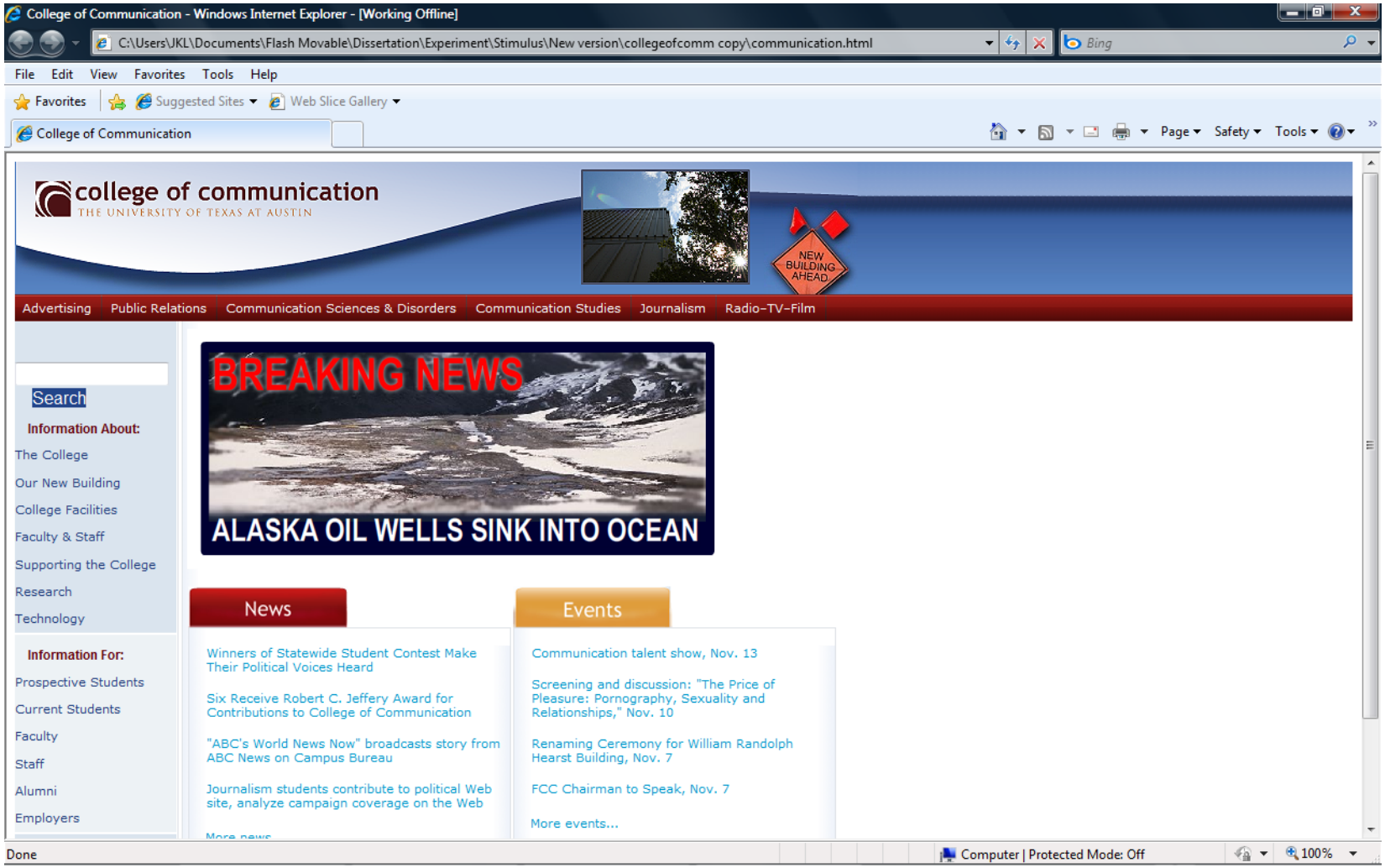
MOST IMPORTANT PROBLEM

What are the most important issues facing our country?

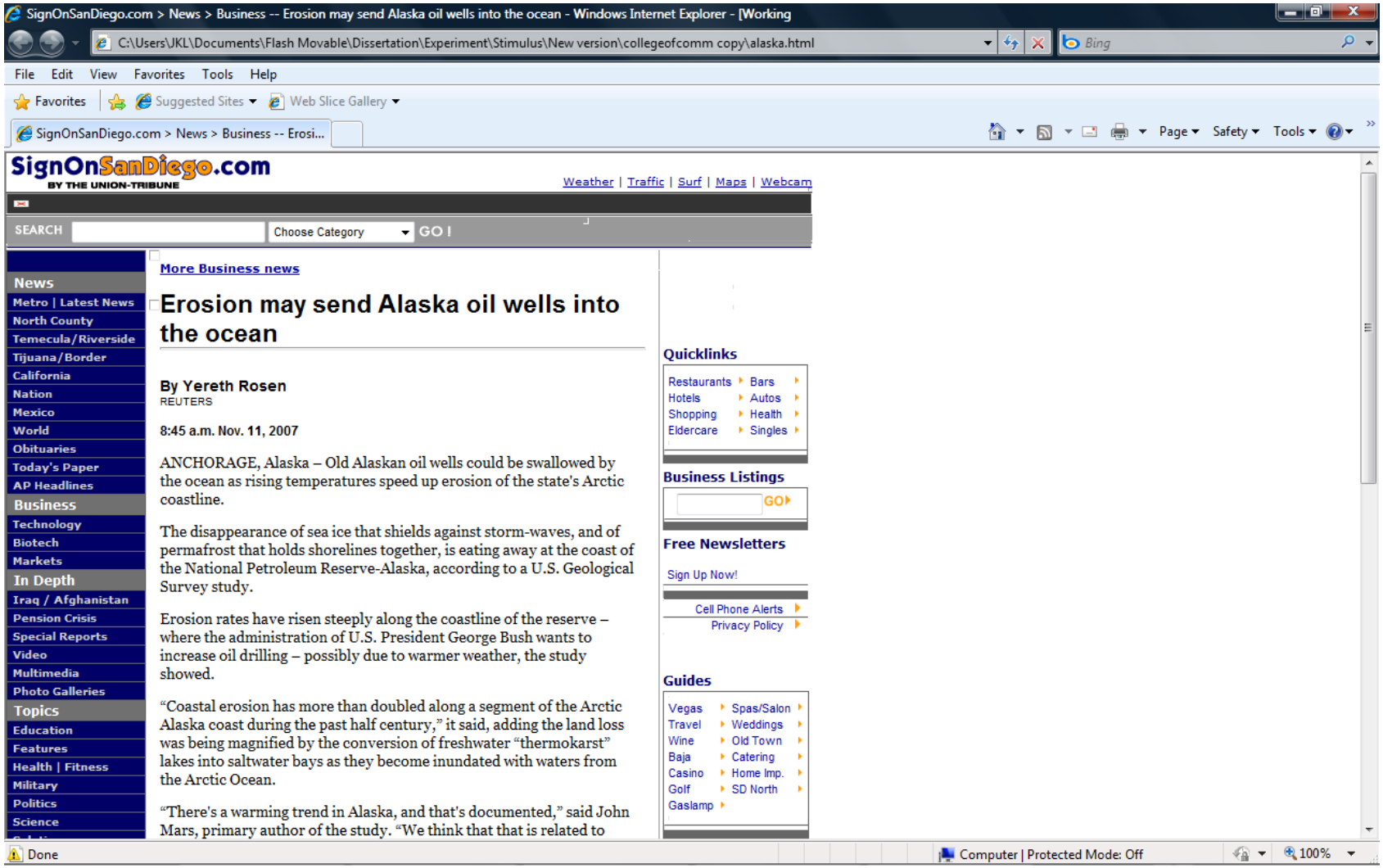
Appendix B: Web Sites of Experiment

The Initial Web Page without Manipulation for a Control Group

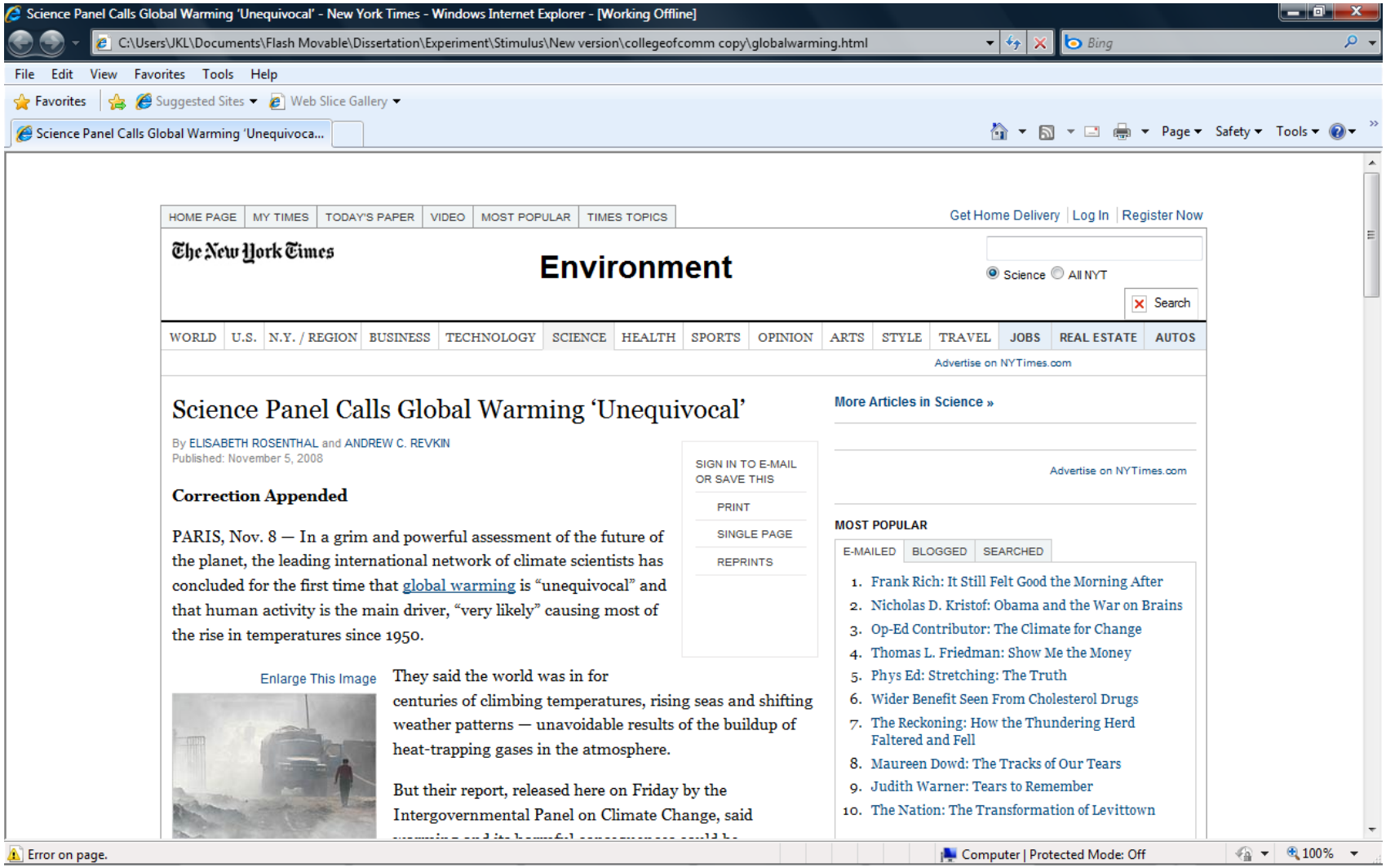
The Initial Web Page with Manipulation for Treatment Groups



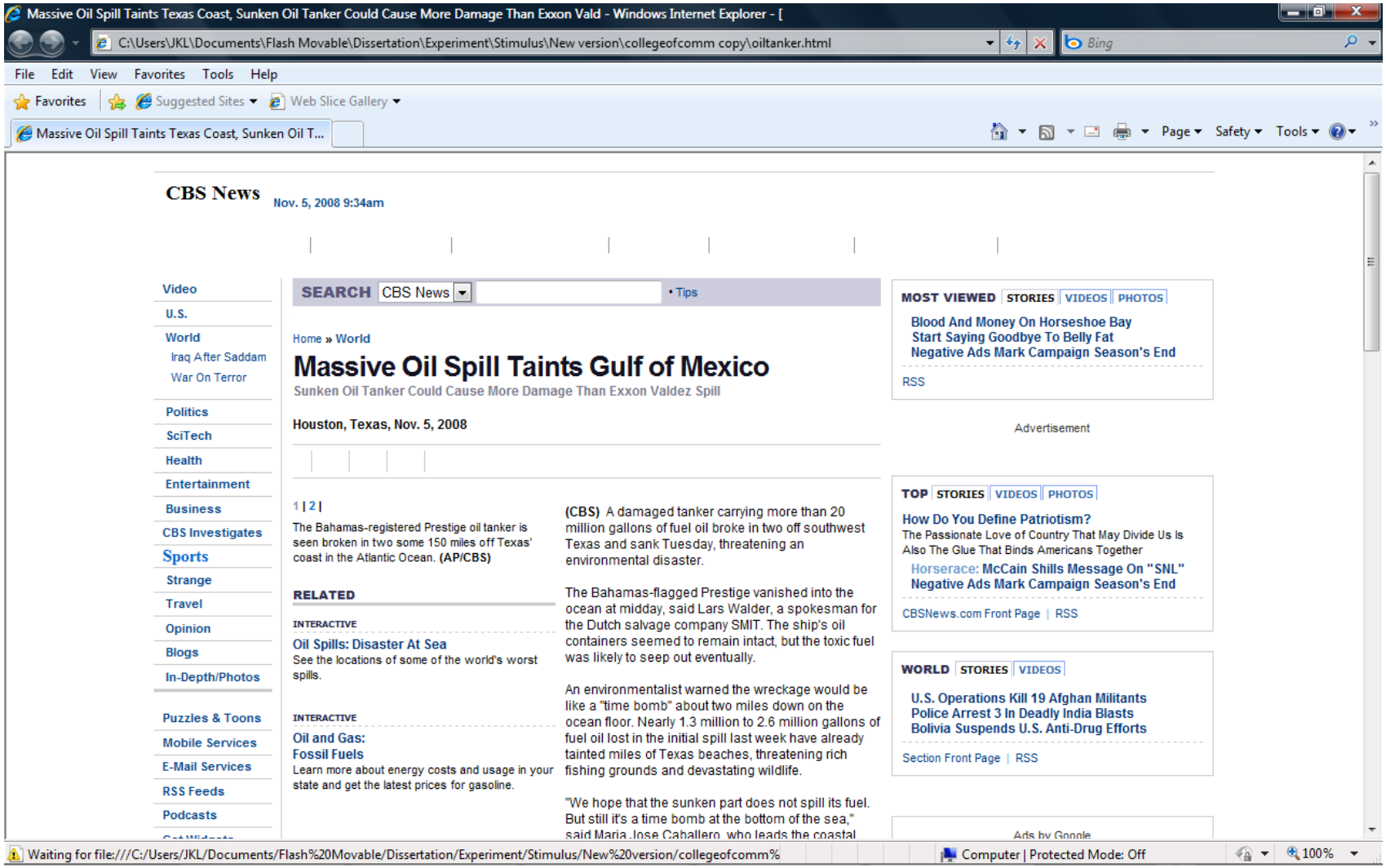
Stimulus News Story 1: Alaska Oil Wells Sink into Ocean



Stimulus News Story 2: Global Warming Unequivocal



Stimulus News Story 3: Gulf of Mexico Massive Oil Spill



Stimulus News Story 4: Pollution Affects Baby Genes

Appendix C: Post-Test Questionnaire of Experiment

INSTRUCTION: Thank you for participating in the study. This survey asks questions specific to web site use. To better understand the information usage pattern, this survey also asks you more general questions. Please raise your hand if you have any question.

A01. Shown below is a list of issues that have faced the society in recent years. How important do you think each is?

WAR ON TERROR:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

ENVIRONMENT:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

ECONOMY:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

HEALTH CARE:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

FOREIGN AFFAIRS:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

A02. For the same issues, how much do you care about each?

WAR ON TERROR:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

ENVIRONMENT:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

ECONOMY:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

HEALTH CARE:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

FOREIGN AFFAIRS:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

A03. For the same issues, how much do you think people in government should worry about each?

WAR ON TERROR:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

ENVIRONMENT:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

ECONOMY:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

HEALTH CARE:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

FOREIGN AFFAIRS:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

A04. Compared with how you feel about other public issues, how strong are your feelings on these issues?

WAR ON TERROR:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

ENVIRONMENT:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

ECONOMY:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

HEALTH CARE:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

FOREIGN AFFAIRS:
1. Very much 2. A lot 3. Some 4. A little 5. Not at all

A05. Have you ever seen or heard recently any news stories about oil spill in the ocean?
1. No
2. Yes (If yes, describe what happened)

A06. Have you ever seen or heard recently any news stories about air pollution?
1. No
2. Yes (If yes, describe what happened)

A07. Have you ever seen or heard recently any news stories about Alaska oil wells?
1. No
2. Yes (If yes, describe what happened)

A08. Have you ever seen or heard recently any news stories about global warming?

1. No
2. Yes (If yes, describe what happened)

A09. Regarding College of Communication Web sites, rate the overall content.
1. Excellent 2. Good 3. Average 4. Poor 5. Very poor

A10. Regarding College of Communication Web sites, rate the ease of navigation.
1. Excellent 2. Good 3. Average 4. Poor 5. Very poor

A11. Regarding College of Communication Web sites, rate the overall look and layout.
1. Excellent 2. Good 3. Average 4. Poor 5. Very poor

A12. Regarding College of Communication Web sites, rate your ability to find the information you needed.
1. Excellent 2. Good 3. Average 4. Poor 5. Very poor

Would you agree with following statement about College of Communication Web sites?

A13. Information was clearly written and easy to understand.
1. Strongly agree 2. Agree 3. Undecided 4. Disagree 5. Strongly disagree

A14. The website is free of grammar or spelling errors.
1. Strongly agree 2. Agree 3. Undecided 4. Disagree 5. Strongly disagree

A15. Navigational links are intuitive and appropriate.
1. Strongly agree 2. Agree 3. Undecided 4. Disagree 5. Strongly disagree

A16. Text is easy to read.
1. Strongly agree 2. Agree 3. Undecided 4. Disagree 5. Strongly disagree

A17. Website layout and design are professional and engaging.
1. Strongly agree 2. Agree 3. Undecided 4. Disagree 5. Strongly disagree

A18. Overall the Web site is useful.
1. Strongly agree 2. Agree 3. Undecided 4. Disagree 5. Strongly disagree

A19. How often do you watch TV news to get information about current events, public issues, or politics?

1. Every day
2. 5 to 6 days per week
3. 3 to 4 days per week
4. 1 to 2 days per week
5. Once every few weeks
6. Less often
7. Never

A20. How often do you read newspapers to get information about current events, public issues, or politics?

1. Every day
2. 5 to 6 days per week
3. 3 to 4 days per week
4. 1 to 2 days per week
5. Once every few weeks
6. Less often
7. Never

A21. How often do you go online to get information about current events, public issues, or politics?

1. Every day
2. 5 to 6 days per week
3. 3 to 4 days per week
4. 1 to 2 days per week
5. Once every few weeks
6. Less often
7. Never

A22. How often do you read magazines to get information about current events, public issues, or politics?

1. Every day
2. 5 to 6 days per week
3. 3 to 4 days per week
4. 1 to 2 days per week
5. Once every few weeks
6. Less often
7. Never

A23. How often do you listen to radio to get information about current events, public issues, or politics?

1. Every day
2. 5 to 6 days per week
3. 3 to 4 days per week
4. 1 to 2 days per week
5. Once every few weeks
6. Less often
7. Never

A24. What job or political office does Dick Cheney NOW hold?

A25. What job or political office does Nancy Pelosi NOW hold?

A26. What job or political office does John G Roberts Jr. NOW hold?

A27. What job or political office does Ben Bernanke NOW hold?

A28. Who has the final responsibility to decide if a law is constitutional or not?

1. The president
2. The Congress
3. The Supreme Court
4. Don't know

A29. Whose responsibility is it to nominate judges to the federal courts?

1. The president
2. The Congress
3. The Supreme Court
4. Don't know

A30. Which party has the most members in the House of Representatives in Washington?

1. Republican
2. Democrat
3. Don't know

A31. Which party has the most members in the Senate in Washington?

1. Republican
2. Democrat
3. Don't know

A32. Are you?

1. Female 2. Male

A33. What is your race or ethnicity?

1. Black
2. White
3. Hispanic
4. Asian
5. Native American
6. Other (specify)

A34. How much are you interested in current events, public issues, or politics?

1. Very much 2. A lot 3. Some 4. A little 5. Not at all

A35. Generally speaking, do you usually think of yourself as a REPUBLICAN, a DEMOCRAT, an INDEPENDENT, or what?

1. Strong Democrat
2. Weak Democrat
3. Independent closer to Democrat
4. Independent
5. Independent closer to Republican
6. Weak Republican
7. Strong Republican
8. Other
9. Don’t know

A36. Where would you place YOURSELF on the following scale, or haven't you thought much about this?

1. Extremely liberal
2. Liberal
3. Slightly liberal
4. Moderate; middle of the road
5. Slightly conservative
6. Conservative
7. Extremely conservative
8. Haven't thought much
9. Don't know

****

End of survey. Thank you very much for your participation.

References

Abramson, J. B., Arterton, F. C., & Orren, G. R. (1988). The electronic commonwealth: The impact of new media technologies on democratic politics. New York: Basic Books.

Acar, A. (2007). Testing the effects of incidental advertising exposure in online gaming environments. Journal of interactive advertising, 8(1).

Adamic, L. A., & Glance, N. (2005). The Political Blogosphere and the 2004 U.S. Election: Divided They Blog. Paper presented at the 3rd international workshop on Link discovery, Chicago, Illinois.

Agosto, D. E. (2002). Bounded rationality and satisficing in young people's web-based decision making. Journal of the American Society for Information Science and Technology, 53(1), 16-27.

Aigner, P. (1976). Testing new approaches to agenda setting: A republication and extension. In M. E. McCombs & G. Stone (Eds.), *Studies in Agenda Setting*. Syracuse, NY: Newhouse Communication Research Center.

Allen, R. L., & Waks, L. (1986). *The dimensionality of commonly employed mass media exposure measures*. Paper presented at the annual conference of the International Communication Association.

Althaus, S. L., & Tewksbury, D. (2002). Agenda setting and the "new" news: Patterns of issue importance among readers of the paper and online versions of the New York Times. *Communication Research, 29*(2), 180-207.

Anderson, C. (2006). *The Long Tail*. New York: Hyperion.

Atkin, C. K. (1973). Instrumental utilities and information seeking. In P. Clark (Ed.), *New models for mass communication research* (pp. 205–242). Beverly Hills, CA: Sage.

Atre, J., & Katz, E. (2005). *What's killing television news? Experimentally assessing the effects of multiple channels on media choice.* Paper presented at the annual meeting of the International Communication Association, New York, NY.

Bartels, L. M. (1996). Uninformed votes: Information effects in presidential elections. *American Journal of Political Science, 40*(1), 194-230.

Baum, M. A. (2002). Sex, lies, and war: How soft news brings foreign policy to the inattentive public. *American Political Science Review, 96*(1), 91-109.

Baum, M. A. (2003). *Soft news goes to war: Public opinion and American foreign policy in the new media age*. Princeton, NJ: Princeton University Press.

Baum, M. A. & Groeling, T. (2008). New media and the polarization of American political discourse. *Political Communication, 25*(4), 345-365.

Beales, H., Mazis, M. B., Salop, S. C., & Staelin, R. (1981). Consumer search and public policy. *Journal of Consumer Research, 8*(1), 11-22.

Beniger, J. R. (1983). Does television enhance the shared symbolic environment? Trends in labeling of editorial cartoons, 1948-1980. *American Sociological Review, 48*(1), 103-111.

Bennett, W. L. (1998). The UnCivic culture: Communication, identity, and the rise of lifestyle politics. *PS: Political Science and Politics, 31*(4), 740-761.

Bennett, W. L., & Iyengar, S. (2008). A new era of minimal effects? The changing foundations of political communication. *Journal of Communication, 58*(4), 707-731.

Berelson, B. (1952). Democratic theory and public opinion. *Public Opinion Quarterly, 16*(3), 313-330.

Berrens, R. P., Bohara, A. K., Jenkins-Smith, H., Silva, C., & Weimer, D. L. (2003). The advent of Internet surveys for political research: A comparison of telephone and Internet samples. *Political Analysis, 11*(1), 1-22.

Best, S. J., & Krueger, B. (2002). New approaches to assessing opinion: The prospects for electronic mail surveys. *International Journal of Public Opinion Research, 14*(1), 73-92.

Bettman, J. R. (1979). *An information processing theory of consumer choice*. Reading, MA: Addison-Wesley Publishing Co.

Bimber, B. (1998). The Internet and political transformation: Populism, community, and accelerated pluralism. *Polity, 31*(1), 133-160.

Blumler, J. G., & McQuail, D. (1968). *Television in politics: Its uses and influence*. London, UK: Faber and Faber.

Bornstein, R. F., Leone, D. R., & Galley, D. J. (1987). The generalizability of subliminal mere exposure effects: Influence of stimuli perceived without awareness on social behavior. *Journal of Personality and Social Psychology, 53*(6), 1070-1079.

Bosso, C. J. (1989). Setting the agenda: Mass media and the discovery of famine in Ethiopia. In M. Margolis & G. A. Mauser (Eds.), *Manipulating public opinion: Essays on public opinion as a dependent variable* (pp. 153-174). Pacific Grove, CA: Brooks/Cole.

Brosius, H. B., & Kepplinger, H. M. (1992). Linear and nonlinear models of agenda-setting in television. *Journal of Broadcasting & Electronic Media, 36*(1), 5-24.

Brown, J., Culkin, N., & Fletcher, J. (2001). Human factors in business-to-business research over the Internet. *International Journal of Market Research, 43*(4), 425-440.

Bryce, J. (1888). *The American Commonwealth*. London, UK: Macmillan.

Bucy, E. P. (2004). Interactivity in society: Locating an elusive concept. *Information Society, 20*(5), 373 - 383.

Bucy, E. P., & Tao, C.-C. (2007). The mediated moderation model of interactivity. *Media Psychology, 9*(3), 647-672.

Castells, M. (1996). *The rise of the network society*. Cambridge: Blackwell Books.

Chaffee, S. H., & Metzger, M. J. (2001). The end of mass communication? *Mass Communication & Society, 4*(4), 365-379.

Choi, S. M., & Lee, W. N. (2007). Understanding the impact of direct-to-consumer (DTC) pharmaceutical advertising on patient-physician interactions: Adding the web to the mix. *Journal of Advertising, 36*(3), 137-149.

Coffman, K. G., & Odlyzko, A. (2002). Internet growth: Is there a "Moore's Law" for data traffic? In J. Abello, P. M. Pardalos & M. G. C. Resende (Eds.), *Handbook of Massive Data Sets* (pp. 47-93): Kluwer.

Coleman, R., & McCombs, M. E. (2007). The young and agenda-less? Exploring age-related differences in agenda setting on the youngest generation, baby boomers, and the civic generation. *Journalism & Mass Communication Quarterly, 84*(3), 495-508.

Converse, P. E. (1964). The nature of belief systems in mass politics. In D. E. Apter (Ed.), *Ideology and Discontent* (pp. 206-261). Chicago, IL: The Free Press of Glencoe.

Daugherty, T., Lee, W. N., Gangadharbatla, H., Kim, K., & Outhavong, S. (2005). Organizational virtual communities: Exploring motivations behind online panel participation. *Journal of Computer-Mediated Communication, 10*(4).

Davis, R. (1999). *The Web of politics: The Internet's impact on the American political system*. New York: Oxford University Press.

Dearing, J. W., & Rogers, E. M. (1996). *Agenda-setting*. Thousand Oaks, CA: Sage.

Delli Carpini, M. X., & Keeter, S. (1996). *What Americans know about politics and why it matters*. New Haven, CT: Yale University Press.

Downes, E. J., & McMillan, S. J. (2000). Defining interactivity: A qualitative identification of key dimensions. *New Media & Society, 2*(2), 157-179.

Downs, A. (1957). *An economic theory of democracy*. New York: Harper.

Eagle, M. N., & Leiter, E. (1964). Recall and recognition in intentional and incidental learning. *Journal of experimental psychology, 68*(1), 58-63.

Erbring, L., Goldenberg, E. N., & Miller, A. H. (1980). Front-page news and real-world cues: A new look at agenda-setting by the media. *American Journal of Political Science, 24*(1), 16-49.

Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.

Fiorina, M. P. (1990). Informatioin and rationality in elections. In J. A. Ferejohn & J. H. Kuklinski (Eds.), *Information and democratic processes* (pp. 329-344). Urbana, IL: University of Illinois Press.

Frensch, P. A. (1998). One concept, multiple meanings. In M. A. Stadler & P. A. Frensch (Eds.), *Handbook of implicit learning* (pp. 47-104). Thousand Oaks, CA: Sage.

Funkhouser, G. R. (1973). The issues of the sixties: An exploratory study in the dynamics of public opinion. *Public Opinion Quarterly, 37*(1), 62-75.

Funkhouser, G. R., & McCombs, M. E. (1972). Predicting the diffusion of information to mass audiences. *Journal of Mathematical Sociology, 2*, 121-130.

Ghanem, S. I., & Wanta, W. (2001). Agenda-setting and Spanish cable news. *Journal of Broadcasting & Electronic Media, 45*(2), 277-289.

Ginsberg, B. (1986). *The captive public: How mass opinion promotes state power*. New York: Basic Books.

Golan, G. (2006). Inter-media agenda setting and global news coverage. *Journalism Studies, 7*(2), 323 - 333.

Graf, J., & Aday, S. (2008). Selective attention to online political information. *Journal of Broadcasting & Electronic Media, 52*(1), 86-100.

Gunter, B., Nicholas, D., Huntington, P., & Williams, P. (2002). Online versus offline research: Implications for evaluating digital media. *Aslib Proceedings, 54*(4), 229-239.

Haist, F., Shimamura, A. P., & Squire, L. R. (1992). On the relationship between recall and recognition memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 18*(4), 691-702.

Hamilton, J. (2004). *All the news that's fit to sell: How the market transforms information into news*. Princeton: Princeton University Press.

Havick, J. (2000). The impact of the Internet on a television-based society. *Technology in Society, 22*(2), 273-287.

Hill, D. B. (1985). Viewer characteristics and agenda setting by television news. *Public Opinion Quarterly, 49*(3), 340-350.

Holbrook, R. A., & Hill, T. G. (2005). Agenda-setting and priming in prime time television: Crime dramas as political cues. *Political Communication, 22*(3), 277-295.

Hollander, B. A. (2005). Late-night learning: Do entertainment programs increase political campaign knowledge for young viewers? *Journal of Broadcasting & Electronic Media, 49*(4), 402-415.

Hovland, C. I., Janis, I. L., & Kelley, H. H. (1953). *Communication and persuasion: Psychological studies of opinion change*. New Haven, CT: Yale University Press.

Iyengar, S. (1979). Television news and issue salience: A reexamination of the agenda-setting hypothesis. *American Politics Research, 7*(4), 395-416.

Iyengar, S., & Hahn, K. S. (2009). Red media, blue media: Evidence of ideological selectivity in media use. *Journal of Communication, 59*(1), 19-39.

Iyengar, S., & Kinder, D. R. (1987). *News that matters*. Chicago: The University of Chicago Press.

Iyengar, S. S., & Lepper, M. R. (2000). When choice is demotivating: Can one desire too much of a good thing? *Journal of Personality and Social Psychology, 79*(6), 995-1006.

Janiszewski, C. (1988). Preconscious processing effects: The independence of attitude formation and conscious thought. *Journal of Consumer Research, 15*(2), 199-209.

Janiszewski, C. (1990). The influence of print advertisement organization on affect toward a brand name. *Journal of Consumer Research, 17*(1), 53-65.

Janiszewski, C. (1993). Preattentive mere exposure effects. *Journal of Consumer Research, 20*(3), 376-392.

Jenkins, J. G. (1933). Instruction as a factor in 'incidental' learning. *American Journal of Psychology, 45*(3), 471-477.

Jones, G. V. (1990). Misremembering a familiar object: When left is not right. *Memory & Cognition, 18*, 174–182.

Jones, G. V., & Martin, M. (1992). Misremembering a familiar object: mnemonic illusion, not drawing bias. *Memory & Cognition, 20*(2), 211.

Kahlor, L. A. (2007). An augmented risk information seeking model: The case of global warming. *Media Psychology, 10*(3), 414-435.

Katz, E. (1996). And deliver us from segmentation. *Annals of the American Academy of Political and Social Science, 546*, 22-33.

Katz, E., Gurevitch, M., & Hass, H. (1973). On the use of the mass media for important things. *American Sociological Review, 38*, 164-181.

Katz, E., & Lazarsfeld, P. F. (1955). *Personal Influence*. New York: Free Press.

Kaye, B. K., & Johnson, T. J. (2002). Online and in the know: Uses and gratifications of the Web for political information. *Journal of Broadcasting & Electronic Media, 46*(1), 54-71.

Kelly, S. W., Burton, A. M., Kato, T., & Akamatsu, S. (2001). Incidental learning of real-world regularities. *Psychological Science, 12*(1), 86-89.

Kiesler, S., & Sproull, L. S. (1986). Response effects in the electronic survey. *Public Opinion Quarterly, 50*(3), 402-413.

Kiousis, S. (2002). Interactivity: a concept explication. *New Media Society, 4*(3), 355-383.

Ko, H., Cho, C.-H., & Roberts, M. S. (2005). Internet uses and gratifications. *Journal of Advertising, 34*(2), 57-70.

Kornhauser, W. (1959). *The Politics of Mass Society*. Glencoe, IL: Free Press.

Krugman, H. E. (1965). The impact of television advertising: Learning without involvement. *Public Opinion Quarterly, 29*(3), 349-356.

Krugman, H. E., & Hartley, E. L. (1970). Passive learning from television. *Public Opinion Quarterly, 34*(2), 184-190.

Lasorsa, D. L. (1991). Effects of newspaper competition on public opinion diversity. *Journalism Quarterly, 68*(1-2), 38-47.

Lasorsa, D. L., & Wanta, W. (1990). Effects of personal, interpersonal and media experiences on issue saliences. *Journalism Quarterly, 67*(4), 804-813.

Lau, R. R., & Redlawsk, D. P. (1997). Voting correctly. *American Political Science Review, 91*(3), 585-598.

Lazarsfeld, P. F., Berelson, B., & Gaudet, H. (1948). *The people's choice: How the voter makes up his mind in a presidential campaign*. New York: Columbia University Press.

Lee, B., Lancendorfer, K. M., & Lee, K. J. (2005). Agenda-setting and the internet: The intermedia influence of internet bulletin boards on newspaper coverage of the 2000 general election in South Korea. *Asian Journal of Communication, 15*(1), 57-71.

Lee, J. K. (2007). The effect of the Internet on homogeneity of the media agenda: A test of the fragmentation thesis. *Journalism & Mass Communication Quarterly, 84*(4), 745-760.

Levy, M. R., & Windahl, S. (1984). Audience activity and gratifications: A conceptual clarification and exploration. *Communication Research, 11*, 51–78.

Liebes, T. (1992). Decoding television news: The political discourse of Israeli hawks and doves. *Theory and society, 21*(3), 357-381.

Lim, J. (2006). A cross-lagged analysis of agenda setting among online news media. *Journalism & Mass Communication Quarterly, 83*(2), 298-312.

Livingstone, S., Bober, M., & Helsper, E. J. (2005). Active participation or just more information? *Information, Communication & Society, 8*(3), 287-314.

Lopez-Escobar, E., Llamas, J. P., & McCombs, M. E. (1998). Agenda setting and community consensus: First and second level effects. *International Journal of Public Opinion Research, 10*(4), 335-348.

Lowell, A. L. (1914). *Public opinion and popular government*. New York, NY: Longmans, Green & Co.

Luskin, R. C. (1990). Explaining political sophistication. *Political Behavior, 12*(4), 331-361.

Mandler, G., Nakamura, Y., & Van Zandt, B. J. (1987). Nonspecific effects of exposure on stimuli that cannot be recognized. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 13*(4), 646-648.

Martin, M., & Jones, G. V. (1997). Memory for orientation in the natural environment. *Applied Cognitive Psychology, 11*(4).

McClure, R., & Patterson, T. (1976). Print vs. network news. *Journal of Communication, 26*(2), 23-28.

McCombs, M. E. (1997). Building consensus: The news media's agenda-setting roles. *Political Communication, 14*(4), 433-443.

McCombs, M. E. (2004). *Setting the agenda: The mass media and public opinion*. Cambridge: Polity Press.

McCombs, M. E. (2005). A look at agenda-setting: Past, present and future. *Journalism Studies, 6*(4), 543-557.

McCombs, M. E. (2008). *Civic osmosis*. Speech presented at the The Philip Meyer Symposium of School of Journalism and Mass Communication, University of North Carolina at Chapel Hill.

McCombs, M. E., Lopez-Escobar, E., & Llamas, J. P. (2000). Setting the agenda of attributes in the 1996 Spanish general election. *Journal of Communication, 50*(2), 77-92.

McCombs, M. E., & Shaw, D. L. (1972). The agenda-setting function of mass media. *Public Opinion Quarterly, 36*(2), 176-187.

McCombs, M. E., & Shaw, D. L. (1993). The evolution of agenda-setting research: 25 years in the marketplace of ideas. *Journal of Communication, 43*(2), 58-67.

McCombs, M. E., & Zhu, J. H. (1995). Capacity, diversity, and volatility of the public agenda: Trends from 1954 to 1994. *Public Opinion Quarterly, 59*(4), 495-525.

McGeorge, P., & Burton, A. M. (1990). Semantic processing in an incidental learning task. *Quarterly Journal of Experimental Psychology, 42*(3), 597-609.

McGuire, W. J. (1968). Personality and susceptibility to social influence. In E. F. Borgatta & W. W. Lambert (Eds.), *Handbook of personality theory and research* (Vol. 2, pp. 1130–1187). Chicago, IL: Rand-McNally.

McLaughlin, B. (1965). 'Intentional' and 'incidental' learning in human subjects: The role of instructions to learn and motivation. *Psychological Bulletin, 63*(5), 359-376.

Meyrowitz, J. (1985). *No sense of place: The impact of electronic media on social behavior*. New York, NY: Oxford University Press.

Mogilner, C., Rudnick, T., & Iyengar, S. S. (2008). The mere categorization effect: How the presence of categories increases choosers' perceptions of assortment variety and outcome satisfaction. *Journal of Consumer Research, 35*(2), 202-215.

Morris, M., & Ogan, C. (1996). The Internet as mass medium. *Journal of Communication, 46*(1), 39-50.

Morton, J. (1967). A Singular Lack of Incidental Learning. *Nature, 215*(5097), 203-204.

Negroponte, N. (1995). *Being Digital*. New York: Knopf.

Neuman, W. R. (1991). *The future of the mass audience*. New York: Cambridge University Press.

Neuman, W. R., Just, M. R., & Crigler, A. N. (1992). *Common knowledge: News and the construction of political meaning*. Chicago: University of Chicago Press.

Newell, A., & Simon, H. A. (1972). *Human problem solving*. Englewood cliffs, NJ: Prentice Hall.

Nimmo, D. (1990). Principles of information seeking in information processing: A preliminary political analysis. In S. Kraus (Ed.), *Mass communication and political information processing* (pp. 3-17). Hillsdale, NJ: Lawrence Erlbaum Associates.

Owen, B. M., & Wildman, S. S. (1992). *Video economics*. Cambridge, MA: Harvard University Press.

Paek, H.-J., Yoon, S.-H., & Shah, D. V. (2005). Local news, social integration, and community participation: Hierarchical linear modeling of contextual and cross-level effects. *Journalism & Mass Communication Quarterly, 82*(3), 587-606.

Papacharissi, Z., & Rubin, A. M. (2000). Predictors of Internet use. *Journal of Broadcasting & Electronic Media, 44*(2), 175-196.

Patterson, T. E. (1980). *The mass media election: How Americans choose their president*. New York: Praeger.

Pew Research Center for the People and Press. (2008). *Most approve of Wall Street bailout and see Obama as better able to address crisis: Interest in the economy highest in nearly 20 years*. Washington, DC: Pew Research Center.

Popkin, S. L. (1994). *The reasoning voter: Communication and persuasion in presidential campaigns* (2nd ed.). Chicago: University of Chicago Press.

Posner, M. I. (1973). *Cognition: An introduction*. Glenview, IL: Scott Foresman.

Pracejus, J. W. (1995). Is more exposure always better? Effects of incidental exposure to a brand name on subsequent processing of advertising. *Advances in Consumer Research, 22*(1), 319-322.

Price, D. d. S. (1963). *Little science, big science*. New York: Columbia University Press.

Price, V., & Zaller, J. (1993). Who gets the news? *Public Opinion Quarterly, 57*(2), 133-164.

Prior, M. (2005). News vs. entertainment: How increasing media choice widens gaps in political knowledge and turnout. *American Journal of Political Science, 49*(3), 577-592.

Prior, M. (2007). *Post-broadcast democracy: How media choice increases inequality in political involvement and polarizes elections*. New York: Cambridge University Press.

Putnam, R. (2000). *Bowling Alone*. New York: Simon and Schuster.

Rafaeli, S. (1988). Interactivity: From new media to communication. In R. P. Hawkins, J. Wiemann & S. Pingree (Eds.), *Advancing communication science: Merging mass and interpersonal processes*. Newbury Park: Sage.

Reber, A. S. (1989). Implicit learning and tacit knowledge. *Journal of Experimental Psychology: General, 118*(3), 219-235.

Reese, S. D., & Danielian, L. H. (1989). Intermedia influence and the drug issue: Converging on cocaine. In P. Shoemaker (Ed.), *Communication campaigns about drugs*. Hillsdale: Lawrence Erlbaum Associates.

Reese, S. D., Rutigliano, L., Hyun, K., & Jeong, J. (2007). Mapping the blogosphere: Professional and citizen-based media in the global news arena. *Journalism, 8*(3), 235-261.

Riffe, D., Lacy, S., & Fico, F. G. (1998). *Analyzing media messages: Using quantitative content analysis in research*. Mahwah: Erlbaum.

Roberts, J. H., & Lattin, J. M. (1991). Development and testing of a model of consideration set composition. *Journal of Marketing Research, 28*(4), 429-440.

Roberts, M., Wanta, W., & Dzwo, T.-H. (2002). Agenda setting and issue salience online. *Communication Research, 29*(4), 452-465.

Robertson, T. S. (1976). Low-commitment consumer behavior. *Journal of Advertising Research, 16*(2), 19-24.

Robinson, W. (1950). Ecological correlations and the behavior of individuals. *American Sociological Review, 15*(2), 351-357.

Rogers, E. M., Dearing, J. W., & Bregman, D. (1993). The anatomy of agenda-setting research. *Journal of Communication, 43*(2), 68-84.

Ruggiero, T. E. (2000). Uses and gratifications theory in the 21st century. *Mass Communication & Society, 3*(1), 3-37.

Salwen, M. B., Garrison, B., & Driscoll, P. D. (2005). *Online news and the public*. Mahwah, NJ: Lawrence Erlbaum Associates.

Schudson, M. (1978). *Discovering the news: A social history of American newspapers*. New York, NY: Basic Books.

Schwartz, B. (2004). *The paradox of choice*. New York, NY: HarperCollins.

Shapiro, A. L. (1999). *The control revolution*. New York: Public Affairs.

Shapiro, S. (1999). When an ad's influence is beyond our conscious control: Perceptual and conceptual fluency effects caused by incidental ad exposure. *Journal of Consumer Research, 26*(1), 16-36.

Shapiro, S., Macinnis, D. J., & Heckler, S. E. (1997). The effects of incidental ad exposure on the formation of consideration sets. *Journal of Consumer Research, 24*(1), 94-104.

Shaw, D. L., & Hamm, B. J. (1997). Agendas for a public union or for private communities? How individuals are using media to reshape American society. In M. E. McCombs, D. L. Shaw & D. H. Weaver (Eds.), *Communication and democracy: Exploring the intellectual frontiers in agenda-setting theory* (pp. 209–230). Mahwah, NJ: Lawrence Erlbaum Associates.

Shaw, D. L., & Martin, S. E. (1992). The function of mass media agenda setting. *Journalism Quarterly, 69*(4), 902-920.

Shaw, D. L., McCombs, M., Weaver, D. H., & Hamm, B. J. (1999). Individuals, groups, and agenda melding: A theory of social dissonance. *International Journal of Public Opinion Research, 11*(1), 2-24.

Shaw, D. L., & McCombs, M. E. (1977). *The emergence of American political issues: The agenda-setting function of the press*. St. Paul, MN: West.

Simon, H. A. (1955). A behavioral model of rational choice. *Quarterly Journal of Economics, 69*(1), 99-118.

Smith, C. B. (1997). Casting the net: Surveying an Internet population. *Journal of Computer-Mediated Communication, 3*(1), 1-15.

Soroka, S. N. (2002). *Agenda-setting dynamics in Canada*. Vancouver, Canada: UBC Press.

Stanton, J. M. (1998). An empirical assessment of data collection using the Internet. *Personnel Psychology, 51*(3), 709-725.

Stroud, N. J. (2006). Selective exposure to partisan information. Unpublished doctoral dissertation. University of Pennsylvania.

Stroud, N. J. (2008). Media use and political predispositions: Revisiting the concept of selective exposure. *Political Behavior, 30*(3), 341-366.

Sundar, S. S., Kalyanaraman, S., & Brown, J. (2003). Explicating Web site interactivity: Impression formation effects in political campaign sites. *Communication Research, 30*(1), 30-59.

Sunstein, C. (2001). *republic.com*. Princeton: Princeton University Press.

Sunstein, C. R. (2008). Neither Hayek nor Habermas. *Public Choice, 134*(1), 87-95.

Sweetser, K. D., Golan, G. J., & Wanta, W. (2008). Intermedia agenda setting in television, advertising, and blogs during the 2004 election. *Mass Communication & Society, 11*(2), 197-216.

Tarde, G. (1898). Opinion and Conversation. In *L'opinion et la Foule*. Paris, France: Alcan.

Taylor, S. E. (1981). The interface of cognitive and social psychology. In J. H. Harvey (Ed.), *Cognition, social behavior, and the environment* (pp. 189-211). Hillsdale, NJ: Lawrence Erlbaum Associates.

Tewksbury, D. (2005). The seeds of audience fragmentation: Specialization in the use of online news sites. *Journal of Broadcasting & Electronic Media, 49*(3), 332–348.

Tewksbury, D., & Althaus, S. L. (2000). Differences in knowledge acquisition among readers of the paper and online versions of a national newspaper. *Journalism & Mass Communication Quarterly, 77*(3), 457-479.

Tewksbury, D. H., Weaver, A. J., & Maddex, B. D. (2001). Accidentally informed: Incidental news exposure on the World Wide Web. *Journalism & Mass Communication Quarterly, 78*(3), 533-554.

Thompson, L. F., Surface, E. A., Martin, D. L., & Sanders, M. G. (2003). From paper to pixels: Moving personnel surveys to the Web. *Personnel Psychology, 56*(1), 197-227.

Tremayne, M. (2004). The Web of context: Applying network theory to the use of hyperlinks in journalism stories on the Web. *Journalism & Mass Communication Quarterly, 81*(2), 237-253.

Tremayne, M., Zheng, N., Lee, J. K., & Jung, J. (2006). Issue publics on the Web: Applying network theory to the war blogosphere. *Journal of Computer-Mediated Communication, 12*(1), 290-310.

Tsfati, Y. (2003). Does audience skepticism of the media matter in agenda setting? *Journal of Broadcasting & Electronic Media, 47*(2), 157-177.

Turow, J. (1997). *Breaking up America: Advertisers and the new media world*. Chicago, IL: University of Chicago Press.

Wanta, W. (1997). *The public and the national agenda: How people learn about important issues*. Mahwah, NJ: Lawrence Erlbaum Associates.

Webster, J. G. (1986). Audience behavior in the new media environment. *Journal of Communication, 36*(3), 77-91.

Webster, J. G. (2005). Beneath the veneer of fragmentation: Television audience polarization in a multichannel world. *Journal of Communication, 55*(2), 366-382.

West, R. F., & Stanovich, K. E. (1991). The incidental acquisition of information from reading. *Psychological Science, 2*(5), 325-330.

Whitney, D. C., & Becker, L. B. (1982). Keeping the gates for gatekeepers: The effects of wire news. *Journalism Quarterly, 59*(1), 60-65.

Williams, M. E. (1985). Electronic databases. *Science, 228*, 445-456.

Winter, J. P., & Eyal, C. H. (1981). Agenda setting for the civil right issue. *Public Opinion Quarterly, 45*(3), 376-383.

Wright, P., & Barbour, F. (1977). Phased decision strategies: Sequels to an initial screening. In M. Starr & M. Zeleny (Eds.), *Multiple criteria decision making: North Holland TIMS studies in management science* (pp. 91-109). Amsterdam: North-Holland.

Yoo, C. Y. (2008). Unconscious processing of Web advertising: Effects on implicit memory, attitude toward the brand, and consideration set. *Journal of Interactive Marketing, 22*(2), 2-18.

Youn, S.-M. (1994). Program type preference and program choice in a multichannel situation. *Journal of Broadcasting & Electronic Media, 38*(4), 465-475.

Zaller, J. (1992). *The nature and origins of mass opinion*. New York, NY: Cambridge University Press.

Zaller, J. (1996). The myth of massive media impact revived: New support for a iiscredited idea. In D. C. Mutz, P. M. Sniderman & R. A. Brody (Eds.), *Political Persuasion and Attitude Change* (pp. 17-78). Ann Arbor: University of Michigan Press.

Zhu, J. J. H., & He, Z. (2002). Information accessibility, user sophistication, and source credibility: The impact of the Internet on value orientations in mainland China. *Journal of Computer-Mediated Communication, 7*(2).

Zillmann, D., & Bryant, J. (1985). *Selective exposure to communication*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Zucker, H. G. (1978). The variable nature of news media influence. In B. D. Ruben (Ed.), *Communication Yearbook* (Vol. 2, pp. 225-240). New Brunswick, NJ: Transaction Books.

Zukin, C., & Snyder, R. (1984). Passive Learning: When the Media Environment Is the Message. *Public Opinion Quarterly, 48*(3), 629-638.

Vita

Jae Kook Lee was born in Kimcheon, Korea, the son of Chunhyung and Wonak Lee. Upon completion of his high school degree from Pusan High School, Pusan, Korea, in 1987, he attended Seoul National University and pursued a degree in mathematics. After completing his bachelor's degree in 1994, he worked in journalism. In August 2004, Lee entered the School of Journalism at The University of Texas and in May 2006 he earned the degree of Master of Arts. He began his doctoral program in the fall of 2006 at the same university. In the spring of 2009, he accepted an assistant professor position in journalism at Indiana University.

Permanent address: 3517 North Hills Dr. V202, Austin, Texas 78731

This dissertation was typed by the author.